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THE

CALENDAR

OF THE

University of Toronto

FACULTY OF
APPLIED SCIENCE AND ENGINEERING

1911 - 1912

UNIVERSITY PRESS
TORONTO

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1911 CALENDAR 1911

JANUARY

Sun.	1	8	15	22	29
Mon.	2	9	16	23	30
Tues.	3	10	17	24	31
Wed.	4	11	18	25	
Thur.	5	12	19	26	
Fri.	6	13	20	27	
Sat.	7	14	21	28	

FEBRUARY

Sun.		5	12	19	26
Mon.		6	13	20	27
Tues.		7	14	21	28
Wed.	1	8	15	22	
Thur.	2	9	16	23	
Fri.	3	10	17	24	
Sat.	4	11	18	25	

MARCH

Sun.		5	12	19	26
Mon.		6	13	20	27
Tues.		7	14	21	28
Wed.	1	8	15	22	29
Thur.	2	9	16	23	30
Fri.	3	10	17	24	31
Sat.	4	11	18	25	

APRIL

Sun.		2	9	16	23	30
Mon.		3	10	17	24	
Tues.		4	11	18	25	
Wed.		5	12	19	26	
Thur.		6	13	20	27	
Fri.		7	14	21	28	
Sat.	1	8	15	22	29	

MAY

Sun.		7	14	21	28
Mon.	1	8	15	22	29
Tues.	2	9	16	23	30
Wed.	3	10	17	24	31
Thur	4	11	18	25	
Fri.	5	12	19	26	
Sat.	6	13	20	27	

JUNE

Sun.		4	11	18	25
Mon.		5	12	19	26
Tues.		6	13	20	27
Wed.		7	14	21	28
Thur.	1	8	15	22	29
Fri.	2	9	16	23	30
Sat.	3	10	17	24	

JULY

Sun.		2	9	16	23	30
Mon.		3	10	17	24	31
Tues.		4	11	18	25	
Wed.		5	12	19	26	
Thur.		6	13	20	27	
Fri.		7	14	21	28	
Sat.	1	8	15	22	29	

AUGUST

Sun.		6	13	20	27
Mon.		7	14	21	28
Tues.	1	8	15	22	29
Wed.	2	9	16	23	30
Thur.	3	10	17	24	31
Fri.	4	11	18	25	
Sat.	5	12	19	26	

SEPTEMBER

Sun.		3	10	17	24
Mon.		3	11	18	25
Tues.		5	12	19	26
Wed.		6	13	20	27
Thur.		7	14	21	28
Fri.	1	8	15	22	29
Sat.	2	9	16	23	30

OCTOBER

Sun.	1	8	15	22	29
Mon.	2	9	16	23	30
Tues.	3	10	17	24	31
Wed.	4	11	18	25	
Thur	5	12	19	26	
Fri.	6	13	20	27	
Sat.	7	14	21	28	

NOVEMBER

Sun.		5	12	19	26
Mon.		6	13	20	27
Tues.		7	14	21	28
Wed.	1	8	15	22	29
Thur.	2	9	16	23	30
Fri.	3	10	17	24	
Sat.	4	11	18	25	

DECEMBER

Sun.		3	10	17	24	31
Mon.		4	11	18	25	
Tues.		5	12	19	26	
Wed.		6	13	20	27	
Thur		7	14	21	28	
Fri.	1	8	15	22	29	
Sat.	2	9	16	23	30	

1912 CALENDAR 1912

JANUARY

Sun.		7	14	21	28
Mon.	1	8	15	22	29
Tues.	2	9	16	23	30
Wed.	3	10	17	24	31
Thur.	4	11	18	25	
Fri.	5	12	19	26	
Sat.	6	13	20	27	

FEBRUARY

Sun.		4	11	18	25
Mon.		5	12	19	26
Tues.		6	13	20	27
Wed.		7	14	21	28
Thur.	1	8	15	22	29
Fri.	2	9	16	23	
Sat.	3	10	17	24	

MARCH

Sun.		3	10	17	24	31
Mon.		4	11	18	25	
Tues.		5	12	19	56	
Wed.		6	13	20	27	
Thur.		7	14	21	28	
Fri.	1	8	15	22	29	
Sat.	2	9	16	23	30	

APRIL

Sun.		7	14	21	28
Mon.	1	8	15	22	29
Tues.	2	9	16	23	30
Wed.	3	10	17	24	
Thur.	4	11	18	25	
Fri.	5	12	19	26	
Sat.	6	13	20	27	

MAY

Sun.		5	12	19	26
Mon.		6	13	20	27
Tues.		7	14	21	28
Wed.	1	8	15	22	29
Thur.	2	9	16	23	30
Fri.	3	10	17	24	31
Sat.	4	11	18	25	

JUNE

Sun.		2	9	16	23	30
Mon.		3	10	17	24	
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Wed.		5	12	19	26	
Thur.		6	13	20	27	
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JULY

Sun.		7	14	21	28
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Fri.	6	13	20	27	
Sat.	7	14	21	28	

CALENDAR 1911-1912.

1911—Sept.	1	Applications for Registration received.
	4	Last day for receiving applications for Supplemental Examinations.
	18	Supplemental Examinations begin.
	25	Meeting of Faculty Council.
	27	First term begins.
		Last day for receiving Vacation Work.
		President's address to students.
Oct.	4	Meeting of Engineering Society.
	6	Meeting of Faculty Council.
	18	Meeting of Engineering Society.
Nov.	1	Meeting of Engineering Society.
	3	Meeting of Faculty Council.
	15	Meeting of Engineering Society.
	29	Meeting of Engineering Society.
Dec.	1	Meeting of Faculty Council.
	13	Meeting of Engineering Society.
	21	First term ends at 1 p.m.
1912—Jan.	9	Second Term begins.
		Last day for receiving Theses for B.A.Sc.
	10	Meeting of Faculty Council.
	17	Meeting of Engineering Society.
	31	Meeting of Engineering Society.
Feb.	2	Meeting of Faculty Council.
	14	Meeting of Engineering Society.
	20	Faculty Dinner.
	21	Ash Wednesday—Building closed.
	28	Meeting of Engineering Society.
Mar.	1	Meeting of Faculty Council.
	13	Meeting of Engineering Society.
	15	Annual elections of Engineering Society.
	27	Annual Meeting of Engineering Society.
April	4	Meeting of Faculty Council.
	5	Good Friday—Building closed.
	6	Lectures and practical work close.
	10	Annual Examinations begin.
May	3	Meeting of Faculty Council.
June	7	Annual Commencement.

The buildings will be closed on all public holidays and daily at noon during July and August.

The University of Toronto.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

President	R. A. FALCONER, LL.D., D.LITT.
Dean of Faculty	J. GALBRAITH, M.A., LL.D.
Secretary of Faculty	A. T. LAING, B.A.SC.
Bursar	F. A. MOURÉ, ESQ.

G. R. ANDERSON, M.A., *Lecturer in Physics.*	505 Euclid Ave.
R. W. ANGUS, B.A.SC., *Professor of Mechanical Engineering.*	42 Howland Ave.
E. G. R. ARDAGH, B.A.SC., *Lecturer in Chemistry.*	Chem. & Mining Bldg.
J. W. BAIN, B.A.SC., *Associate Professor of Applied Chemistry.*	393 Brunswick Ave.
M. C. BOSWELL, M.A., PH.D., *Lecturer in Organic Chemistry.*	100 Dewson St.
J. R. COCKBURN, B.A.SC., A.M. CAN. SOC. C.E., *Lecturer in Descriptive Geometry.*	50 Major St.
S. R. CRERAR, B.A.SC., *Lecturer in Surveying.*	1[illegible] Carling Ave.
W. HODGSON ELLIS, M.A., M.B., *Professor of Applied Chemistry.*	74 St. Alban St.
J. GALBRAITH, M.A., LL.D., *Professor of Engineering.*	Chem. & Mining Bldg.
P. GILLESPIE, B.A. SC., A.M. CAN. SOC. C.E., *Lecturer in Applied Mechanics.*	358 Davenport Rd.
W. W. GRAY, B.A.SC., *Lecturer in Thermodynamics.*	36 Sinclair Ave.
H. E. T. HAULTAIN, C.E., M.I.M.M., *Professor of Mining Engineering.*	63 Heath St.
J. MCGOWAN, B.A., B.A.SC., *Associate Professor of Applied Mechanics.*	27 McMaster Ave.
H. W. PRICE, B.A.SC., *Lecturer in Electrical Engineering.*	474 Palmerston Ave.
T. R. ROSEBRUGH, M.A., *Professor of Electrical Engineering.*	92 Walmer Rd.
L. B. STEWART, O.L.S., D.T.S., *Professor of Surveying & Geodesy.*	161 Admiral Rd.
J. .J TRAILL, B.A.SC., *Lecturer in Hydraulics.*	106 Victor Ave.
W. M. TREADGOLD, B.A., *Lecturer in Surveying.*	13 Woodlawn Ave. E.
C. H. C. WRIGHT, B.A.SC., MEM. O.A.A., *Professor of Architecture.*	419 Markham St.

Sessional Appointments.

O. F. Adams, *Fellow in Electrical Engineering.*	144 Winchester St.
H. G. Akers, B.A.Sc., *Demonstrator in Electrochemistry.*	447 Jarvis St.
E. W. Banting, B.A.Sc., *Demonstrator in Surveying.*	330 St. George St.
W. C. Blackwood, B.A.Sc., *Demonstrator in Physics..*	38 Henry St.
J. A. Brown, B.A.Sc., *Fellow in Drawing.*	703 Spadina Ave.
H. A. Cooch, B.A.Sc., *Demonstrator in Electrical Engineering.*	264 St. George St.
J. H. Craig, *Fellow in Drawing.*	127 Deleware Ave.
A. V. DeLaporte, *Fellow in Chemistry..*	90 Gloucester St.
S. Dushman, B.A., Ph.D., *Lecturer in Electrochemistry.*	7 Havelock St.
F. C. Dyer, B.A.Sc., *Demonstrator in Mining.*‡	747 Euclid Ave.
W. S. Guest, B.A.Sc., *Demonstrator in Electrical Engineering.*	28 St. Joseph St.
C. L. Gulley, B.A.Sc., *Demonstrator in Electrical Engineering.*	328 Broadview Ave.
R. E. W. Hagarty, B.A.Sc., *Demonstrator in Drawing.*	662 Euclid Ave.
R. H. Hopkins, B.A.Sc., *Demonstrator in Electrical Engineering.*	38 Henry St.
A. N. Hunter, B.A.Sc., *Demonstrator in Electrical Engineering.*	121 Dovercourt Rd.
C. E. Johnston, B.A.Sc., *Fellow in Drawing.*	589 Bathurst St.
J. B. O. Kemp, B.A.Sc., *Fellow in Drawing.*	24 Walter St.
J. T. King, *Fellow in Mining.*	91 Humberside Ave.
P. T. Kirwan, *Fellow in Chemistry.*	27 Irwin Ave.
J. T. Lagergren, M.E., *Lecturer in Machine Design.*	8 Carlton St.
J. M. Langstaff. C.A., F.I.A., F.A.S., *Lecturer in Accountancy.*	666 Bathurst St.
J. H. Lindsay, *Fellow in Surveying.*	49 Wood St.
T. R. Loudon, B.A.Sc., *Lecturer in Metallurgy.*	109 Crescent Ave., Eglinton.
A. Wellesley McConnell, B.A.Sc., *Lecturer in Architecture.*	327 Rusholme Rd.
N. H. Manning, B.A.Sc., *Demonstrator in Mechanical Engineering.*	17 Henry St.
R. J. Marshall, B.A. Sc., *Demonstrator in Applied Mechanics.*	119 Balmoral Ave.
J. W. Melson, B.A.Sc., *Fellow in Drawing.*	3 Classic Ave.
R. W. Moffatt, B.A.Sc., *Demonstrator in Drawing.*	345½ Markham St.

P. W. MUELLER, B.A., *Instructor in German.*	96 Warren Rd.
F. V. MUNRO, B.A.SC., *Fellow in Drawing.*	55 Madison Ave.
L. S. ODELL, *Fellow in Drawing.*	109 Oxford St.
M. PEQUEGNAT, B.A.SC., *Demonstrator in Drawing.*	22 St. Mary St.
J. T. RANSOM, B.A.SC., *Fellow in Surveymg.*	470 Manning Ave.
C. R. REDFERN, B.A.SC., *Demonstrator in Applied Mechanics.*	426 Brunswick Ave.
L. J. ROGERS, *Demonstrator in Chemistry.*	55 Madison Ave.
L. T. RUTLEDGE, B.A.SC., *Fellow in Drawing.*	17 Henry St.
F. V. SEIBERT, *Fellow in Surveying.*	609 Spadina Ave.
R. B. STEWART, M.A., *Demonstrator in Mining.*	175 McCaul St.
J. A. STILES, B.A.SC., *Demonstrator in Drawing.*	574 Ontario St.
W. E. TAYLOR, B.A.SC., *Fellow in Drawing.*	122 Yorkville Ave.
V. C. THOMAS, B.A.SC., *Demonstrator in Mechanical Engineering.*	28 Langley Ave.
W. H. WILSON, *Fellow in Physics.*	63 Breadalbane St.
C. R. YOUNG, B.A.SC., A. M. CAN. SOC. C.E., *Lecturer in Structural Engineering.*	113 Winchester St.
A. R. ZIMMER, B.A.SC., *Demonstrator in Electrical Engineering.*	38 Delaware Ave.

MEMBERS OF THE FACULTY OF ARTS GIVING INSTRUCTION TO STUDENTS IN APPLIED SCIENCE.

F. B. ALLAN, M.A., PH.D., *Associate Professor of Organic Chemistry.*	380 Brunswick Ave.
ALFRED BAKER, M.A., *Professor of Mathematics.*	81 Madison Ave.
B. A. BENSLEY, B.A., PH.D., *Associate Professor of Zoology.*	316 Brunswick Ave.
C. A. CHANT, M.A., PH.D., *Associate Professor of Astro-Physics.*	201 Madison Ave.
A. P. COLEMAN., M.A, PH.D., *Professor of Geology.*	476 Huron St.
A. T. DELURY, M.A., *Professor of Mathematics.*	University of Toronto.
J. H. FAULL, B.A., PH.D., *Associate Professor of Botany.*	102 Yorkville Ave.
W. J. LOUDON, B.A., *Professor of Mechanics.*	133 Walmer Rd.
M. A. MACKENZIE, M.A., PH.D., *Professor of Mathematics.*	1 Bellwoods Park.
W. L. MILLER, B.A., PH.D., *Professor of Physical Chemistry.*	50 St. Albans St.
W. A. PARKS, B.A., PH.D., *Associate Professor of Geology.*	69 Albany Ave.

A. L. Parsons, B.A., 384 Brunswick Ave.
Lecturer in Mineralogy.
J. Squair, B.A., 61 Major St.
Professor of French.
R. B. Thomson, B.A., Forestry Building.
Lecturer in Botany.
T. L. Walker, M.A., Ph.D., 62 Maple Ave.
Professor of Mineralogy and Petrography.
R. Ramsay Wright, B.A.Sc., M.A., LL.D., Lonsdale Ave.
Professor of Biology.

Sessional Appointments.

S. Beatty, B.A., 734 Crawford St.
Fellow in Mathematics.
W. R. Bocking, B.A., 308 Huron St.
Fellow in Mathematics.
A. J. Dempster, B.A., 224 Dundas St.
Fellow in Mathematics.
A. B. Fennell, M.A., 146 Bloor St. W.
Fellow in Mathematics.
W. F. Green, B.A., 2 Indian Grove.
Demonstrator in Mineralogy.
A. E. Hamilton, B.A., 72 Howard Park Ave.
Lecturer in French.
A. G. Huntsman, B.A., 239 Fern Ave.
Lecturer in Biology.
G. S. Scott,
Fellow in Mineralogy.
J. S. Will, B.A., 54 Aberdeen Ave.
Lecturer in French.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

Historical Sketch.

The Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practice Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February ,1877.

By the scheme thus approved of, Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1889 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By the terms of this order the management and discipline of the School was vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degree in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal. theProfessors and Lecturers, together with the Registrar.

By the University Act, 1906, the School of Practical Science was united to the University of Toronto as its Faculty of Applied Science and Engineering.

GRADUATING DEPARTMENTS.

There are seven regular Departments of Instruction:—

1. Civil Engineering.
2. Mining Engineering.
3. Mechanical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.
7. Electrical Engineering.

leading to the degree of Bachelor of Applied Science. The instruction given in these departments extends over a period of four years and is designed to give the student a thorough knowledge of the scientific principles underlying the practice in the several professions, and also such training as may make him immediately useful when he commences professional work.

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E), Mining Engineer (M.E), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), or Chemical Engineer (Chem.E.), as the case may be, subject to the rules and regulations established by the University. (See page 75).

FELLOWSHIPS.

Sessional Fellowships of the value of $500 each are awarded annually in the various departments.

The Fellows are required to take such portions of the work of instruction as may be assigned to them by the Council.

Applications for these fellowships are to be made annually in writing to the Secretary of the Faculty on or before the 1st day of May.

I. MATRICULATION.

1. The matriculation requirements of this Faculty are based upon those given in the curriculum for Junior Matriculation, a copy of which may be obtained on application .

2. A candidate for matriculation must produce satisfactory certificates of good character.

3. The subjects are as follows:

1911: English, History, Mathematics and any three of the following, viz., Greek, Latin, French, German, Experimental Science. Pass standing in Honour Mathematics will be accepted in lieu of one of these optional subjects.

4. 1912: The same prescription, except that pass standing in Honour Mathematics will be required.

5. The pass standard is forty per cent. of the marks assigned to a paper, with an average of fifty per cent., in 1912 the pass standard will be forty per cent. of the marks assigned to a paper with an average of sixty per cent. the standard for Normal School Entrance.

6. A candidate in 1911 or 1912 who has obtained an average of fifty per cent. or sixty per cent. respectively on all the papers but has failed to obtain forty per cent. in not more than two papers may complete matriculation by passing on these papers at any one subsequent examination.

7. Candidates who obtained, prior to 1910, pass standing in at least a majority of the subjects may complete Junior Matriculation by passing in the remaining subjects at a subsequent examination or examinations.

8. The examination for pass and honour Junior Matriculation is held annually in July at centres in Ontario, and, if application is made to the Senate, the examination may, with the co-operation of the Department of Education, be held at centres outside Ontario.

9. Applications accompanied by the fee of $5.00 must be sent not later than the 24th of May to the local Public School Inspector, or in the case of candidates intending to write at the University, to the Registrar.

10. A Junior Matriculation examination, at which no honour papers are set, will be held in September at the University and at such other centres as may from time to time be authorized. Candidates entitled to the privileges of supplemental examinations as well as new candidates, may present themselves at this examination.

11. Applications to write on the September examination, together with the necessary fee, must be received at the Department of Education not later than September 1, for those who wish to write at any centre established in Ontario, and not later than August 1 for any centre elsewhere in Canada.

12. Forms of application, the time-table of the September examination, and further particulars may be had upon application to the Department of Education.

II. ADMISSION.

A candidate for admission in the session 1912-13 must have completed the seventeenth year of his age on or before the first of October of the year in which he seeks to enter.

Applications for admission must be made on blank forms supplied by the Registrar, and should be forwarded early in September.

Applications will be considered from (*a*) those who have completed matriculation including those who hold certificates recognized as equivalent—see marticulation curriculum—, (*b*) those who have failed in not more than two papers of the matriculation examination. The latter must complete matriculation (See sec. 6, p. 13) before being eligible to enter the second year.

Applications based upon other certificates than those mentioned will be considered as occasion may require. Such certificates must be accompanied by an official statement of the marks in the various subjects upon which the certificate was granted.

ADMISSION AD EUNDEM STATUM.

An undergraduate of another University may be admitted *ad eundem statum* on such conditions as the Senate on the recommendation of the Council of the Faculty may prescribe.

An applicant for admission *ad eundem statum* must submit with his petition (1) a calendar of his University giving a full statement of the courses of instruction; (2) an official certificate of character and academic standing.

III. REGISTRATION.

Registration in the various years will begin Sept. 1st. Blank cards for the purpose will be supplied by the Secretary on request.

IV. FEES.

All fees are payable at the Bursar's office between the hours 10 a.m. and 1 p.m. of each week day except Saturday.

The annual fees including tuition, library, laboratory supplies and one annual examination shall be as follows:—

First Year.

If paid in full on or before November 5th	$100.
By instalments:	
First instalment, if paid on or before November 5th	50.00
Second instalment, if paid on or before February 5th	55.00

Second Year.

If paid in full on or before November 5th	110.00
By instalments:	
First instalment, if paid on or before November 5th	55.00
Second instalment, if paid on or before February 5th	60.00

Third and Fourth Years.

If paid in full on or before November 5th	120.00
By instalments:	
First instalment, if paid on or before November 5th	60.00
Second instalment, if paid on or before February 5th	65.00

The above fees are payable in advance. After November 5th a penalty of $1.00 per month will be imposed until the whole amount is paid. In the case of payment by instalments the same rule as to penalty will apply.

Students desiring to pay in instalments must have paid the fees due in the first term before proceeding to the work of the second term.

General Fees.

Matriculation, or registration of Matriculation	$5.00
Supplemental examination	10.00
Admission ad eundem statum	10.00
Degree of B.A.Sc. (Payable not later than April 1st)	10.00

Dues and Deposits.

(Payable to the Secretary of the Faculty at the time of registration.)

Engineering Society membership	$1.00
Annual deposit	2.00

Charges for waste, neglect and breakage are to be met out of the deposit fee, the balance of which will be refunded to the student at the end of the session.

GENERAL INFORMATION FOR STUDENTS.

Discipline.

The Council of University College, and the governing bodies of the federated universities and colleges, respectively, have disciplinary jurisdiction over and entire responsibility for the conduct of their students in respect of all matters arising or occurring in or upon their respective college buildings and grounds, including residences.

The councils of such of the faculties as have assigned for their separate use any building or buildings and grounds, including residences, have disciplinary jurisdiction over and entire responsibility for the conduct of all students in their respective faculties in respect of all matters arising or occuring in or upon such building, or building and grounds.

In all such cases, and, save as aforesaid, as respects all students to whatsoever college or faculty they may belong, disciplinary jurisdiction is vested in the Caput, but the Caput may delegate its authority in any particular case or by any general regulation to the council or other governing body of the university or college or faculty to which the student belongs.

The Caput has also power and authority to determine by general regulation, or otherwise, to what college, faculty or other body the control of university associations belongs.

If there be any question as to the proper body to exercise jurisdiction in any matter of discipline which may arise, the same shall be determined by the Caput, whose decision shall be final.

Disciplinary jurisdiction includes the power to impose fines.

REGULATIONS RESPECTING STUDENTS.

No student will be enrolled in any year, or be allowed to continue in attendance, whose presence for any cause is deemed by the Council to be prejudicial to the interests of the University.

All interference on the part of any student with the personal liberty of another, by arresting him, or summoning him to appear before any tribunal of students, or otherwise subjecting him to any indignity or presonal violence, is forbidden by the Council. In particular, students of all Faculties are warned against the practices known as the "hustling" of freshmen and against inter-year or inter-faculty "hustles" Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

All students shall be in attendance during the whole of each term, unless exempted by special permission of the Council.

Information as to the text books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

In exercising the option in languages students must continue in the second year the selection of the first year.

REGULATIONS RESPECTING EXAMINATIONS.

Regular Examinations.

A student who in either term of the session, fails to perform the work of his course in a manner satisfactory to the professors in charge, will not be allowed to present himself at the final examinations of the year except by special permission of the Council.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the Annual Examinations in April, notice in writing of their intention to take such examinations. A penalty of $1.00 will be imposed upon all candidates who fail to give notice within the proper time.

No student will be allowed to write at the Annual Examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examinations will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and one-half times the minimum required in the case of a written examination.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, electrical design, optics, surveying and architecture, the drawings set in these subjects must be made.

Candidates who fail in passing the Annual Examinations will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

Supplemental Examinations.

A candidate who fails in one or two subjects at the annual examinations, will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 18th of September, 1911.

Candidates are required to send to the Secretary of the Faculty at least two weeks before the commencement of the Supplemental Examinations in September, notice in writing of their intention to take such examinations, and to remit to the Bursar the fee of $10.00.

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

Vacation Work.

Vacation work must be handed in, on or before the first day of the session.

Vacation notes must be on construction only, except in Department 2 (see p.), and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be free-hand pencil drawings with figured dimensions.

No notes, whether taken during the session or the vacation will be counted unless made in the standard note books of the Faculty.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

Honours.

Honours will be granted in each department to the students who pass in all the subjects and obtain at least 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Papers read before the Engineering Society may be considered in granting Honours.

REGULATIONS RESPECTING TERM WORK.

Students working in any laboratory must be governed by the regulations relating thereto as made known from time to time.

No laboratory reports or drawings may be removed from the laboratories without permission. The Council reserves the right to dispose of them as may be thought proper.

Field Work.

No field notes will be counted which have not been taken in the field, and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

Drafting Rooms.

Drawings prescribed for the first term of the session will not be counted unless finished in that term.

The minimum number of drawings shall be twenty-five, and the maximum number thirty-five, except in the Department of Analytical and Applied Chemistry, in which the number shall be fifteen and twenty-five respectively

No drawings will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

Theses.

In the Fourth Year each student is required to prepare a thesis on a subject approved by the Council. Except in cases where the Council gives permission to the contrary before the thesis is begun, the title of the thesis must be sent to the Council for approval before the regular meeting in November. The completed thesis must be handed to the Secretary of the Faculty not later than the first day of the second term and shall become the property of the University. Applications for extension of time beyond the date given must be made to the Council before the regular meeting in December.

EXEMPTIONS.

Applications for exemption from any of the regulations must be made to the Council in writing and the particulars of the case fully stated.

FOURTH YEAR SESSION, 1911-1912.

Students entering the Fourth Year in the session 1911-1912, will be guided by the curriculum and regulations as published in a separate folder, copies of which will be supplied on request by the Secretary.

REGULAR EXAMINATIONS.

(APPROXIMATE LIST).

I. YEAR.

Examinations Held at the End of the Session.

Algebra	1,2,3,4,5,6,7.
Plane Trigonometry	1,2,3,4,5,6,7.
Analytical Geometry	1,2,3,4,5,6,7.
Descriptive Geometry	1,2,3,4,6,7.
Surveying	1,2.
Statics	1,2,3,4,6,7.
Dynamics	1,2,3,6,7.
Electricity and Magnetism	3,5,6,7.
Electric Circuits	3,5,6,7.
Elementary Chemistry	1,2,3,4,5,6,7.
Inorganic Chemistry	5,6.
History and Principles of Architecture	4.
Elementary Mineralogy	5.
French or German	1,2,3,7..
French	4.
German	5,6.
Accounts	1,2,3,4,5,6,7.
Biology	5.

Examinations Held during the Session.

Drawing	1,2,3,4,5,6,7.
Surveying	1,2.
Architectural Sketches	4.
Experimental Electricity	3,5,6,7.
Practical Chemistry	2,5,6.
Mineralogy	5.
Biology	5.

1. Civil Engineering.
2. Mining Engineering.
3. Mechanical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.
7. Electrical Engineering.

II. YEAR.

Examinations Held at the End of the Session.

Calculus	1,2,3,4,(5),6,7.
Spherical Trigonometry	1.
Astronomy	1.
Descriptive Geometry	1,2,3,4,6,7.
Surveying	1,2.
Dynamics of Rotation	1,2,3,7.
Theory of Mechanism	3,7.
Steam Engine	3,7.
Strength of Materials	1,2,3,4,6,7.
Electricity	3,5,6,7.
Engineering Chemistry	1,2,3,4,5,6,7.
Organic Chemistry	1 ,2,3,4,7.
Organic "	5,6.
Inorganic "	2,5,6.
Physical "	5,6.
Analytical Chemistry	5.
Industrial "	5,6.
Optics	1,2,3,4,5,6,7.
Hydrostatics	1,2,3,4,5,6,7.
Architectural Design	4.
History of Architecture	4.
Orders of Architecture	4.
History of Ornament	4.
Mineralogy	1,2.
Geology	2,5.
French or German	1,2,3,7.
French	4.
German	5,6.
Banking and Finance	1,2,3,4,5,6,7.
Biology	(5).
Mining	2.
Metallurgy	2.

Examinations Held During the Session.

Drawing	1,2,3,4,6,7.
Surveying	1,2.
Construction Notes	1,2,3,4,6,7.
Architectural Sketches	4.
Architectural Design	4.
Experimental Optics	1,2,3,4,5,6,7.
Experimental Hydrostatics	1,2,3,4,5,6,7.
Experimental Electricity	3,5,6,7.
Practical Chemistry	1,2,3,4,7.
Practical Chemistry (Quantitative)	2,5,6.
Mineralogy	1,2,5.
Biology	5.
Mining and Ore Dressing	2.

III. YEAR.

Examinations Held at the End of the Session.

Descriptive Geometry	1,4.
Astronomy and Geodesy	1.
Surveying and Levelling	1,2.
Method of Least Squares	1.
Theory of Construction	1,2,3,4
Hydraulics	1,2.3,6,7.
Thermodynamics	3,6,7.
Heat Engines	3.
Mechanics of Machinery	3,7.
Machine Design	3,7.
Electricity	2.
Magnetism and Electricity	3,6,7.
Alternating Current	7.
Electrical Design	7.
Geology	1,2,5.
Crystallography	5.
Elementary Petrography	2.
Ore Deposits	2.
Ferro-Metallurgy	1,2,3,5,6,7.
Metallurgy	2.
Mining	2.
Ore Dressing	2.
Assaying	2.
Architectural Design	4.
History of Architecture	4.
History of Ornament	4.
Building Materials	4.
Cements and Concrete	1.4.
Design of Tall Buildings	4.
Acoustics	4.
Engineering Chemistry	1,2,3,5,6,7.
Industrial Chemistry	5,6.
Analytical "	2,6.
Organic "	5,6.
Electrochemistry	5,6,7.
Chemical Plant	5,6.
Limited Companies	1,2,3,4,5,6,7.
German	5,6.

Examinations Held During the Session.

Drawing	1,2,3,4,6,7.
Surveying	1,2.
Strength of Materials	1,3,4.
Astronomy and Geodesy	1.
Photography	1,3,4,7.
Hydraulics	1.
Heat	1,4,5,6.
Chemistry	2,5,6.
Mineralogy	2.
Geology	2.
Assaying	2,5.
Electricity	3,6,7.
Mechanical Laboratory	3,6,7.
Electrochemistry	5,6,7.
Acoustics	4.
Architectural Sketches	4.
Architectural Design	4.
Crystallography	5.
Construction Notes	1,2,3,4,6,7.
Mining and Ore Dressing	2.

IV. YEAR.

(1912-1913 AND THEREAFTER.)

Examinations Held at the End of the Session.

(DEPENDENT UPON THE SELECTED OPTIONS.)

Retaining Walls, Foundations and Dams.
Thermodynamics.
Hydraulics.
Astronomy and Geodesy.
Railway Engineering.
Geology.
Mineralogy.
Metallurgy.
Mining.
Assaying.
Ore Dressing.
Machine Design.
Mill Building Design.
Strength of Materials.
Electricity
Alternating Current.
Applied Electricity.
Electrochemistry.
Electrometallurgy.
Heating and Ventilating.
Architectural Design.
Industrial Chemistry.
Organic Chemistry.
Industrial Chemistry.
Sanitary and Forensic Chemistry.
Sanitary Chemistry and Bacteriology.
Contracts and Specifications.
Cost Keeping.

Examinations held during the Session.

Thesis.
Laboratory Course on Options Selected.

DEPARTMENT OF CIVIL ENGINEERING.

Department 1.

The courses of study in Civil Engineering are designed to give the student a sound training in the fundamental scientific principles on which the practice of the profession is based. The instruction is given by means of lectures and practical work in the field,the drafting room and the laboratory. In this way the student is led to apply the principles developed in the class room.

Formerly the term Civil Engineering included all the branches of the profession, but some of these became so extensive as to require distinctive names and fields of work for themselves. Even yet Civil Engineering is so comprehensive as to render it impossible for anyone to master all its branches. It may be said to include surveying and topography; works connected with transportation, such as railroads and canals; municipal works, such as waterworks, sewers, streets and pavements; hydraulic works, such as power development, drainage, irrigation, etc.; structural works, such as bridges, roofs, etc.

Notwithstanding the variety of the branches of Civil Engineering above enumerated, they are underlaid by a comparatively compact body of scientific principles which form the basis of the work of instruction. While the subjects of the first year are largely fundamental, an effort is made, to give a professional aspect to the student's work from the very beginning. This is accomplished by the introduction of such subjects as field work and plotting in the curriculum of the first year. In the second and third years the study of fundamental science is continued together with its application to the solution of engineering problems. In the fourth year the student may elect to follow certain optional subjects which form a continuation of the work of the previous years. Here special stress is laid upon experimental work in the laboratory.

SUBJECTS OF INSTRUCTION.

First Year.

Subject		First Term hrs. per wk.		Second Term hrs. per wk.	
	No.	Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2	....	2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Surveying	205–206	1	9	1	
Statics	10	2		2	
Dynamics	11	2		2	
Chemistry	75	2		2	
Modern Language	213–214	1		1	
Accounts	65	1		1	
Drawing	117		13		22

Second Year.

Vacation Work	216				
Calculus	190	2		2	
Spherical Trigonometry	191	1			
Elementary Astronomy	55	1		1	
Descriptive Geometry	121	1		1	
Surveying	207–208	1	8	1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Mineralogy	159–161	2	1	2	
Banking & Finance	66	1		1	
Modern Language	213–214	1		1	
Drawing	123		12		16
Analytical Chemistry	81				6

Third Year.

Subject	No.	First Term hrs. per wk. Lect.	First Term hrs. per wk. Lab'y.	Second Term hrs. per wk. Lect.	Second Term hrs. per wk. Lab'y.
Vacation Work	216				
Least Squares	192			1	
Practical Astronomy	56				
& Geodesy	57	2		2	
Surveying and Levelling	209–210	1	8	1	
Descriptive Geometry	127	1			
Hydraulics	29–30	2		2	3
Photography	199	1	3		
Ferro-Metallurgy	181	1		1	
Theory of Construction	18	2		2	
Cements and Concrete	21			1	
Engineering Chemistry	94	1		1	
Geology	150	1		1	
Limited Companies	67	1		1	
Heat	198	1	1		
*Biology	61	2		2	
Drawing	128		8		19
Strength of Materials	14				1

Fourth Year.

Subject	No.	First Term hrs. per wk. Lect.	First Term hrs. per wk. Lab'y.	Second Term hrs. per wk. Lect.	Second Term hrs. per wk. Lab'y.
Retaining Walls, Foundations and Dams	20	1		1	
Electricity	140	1		1	
Thermodynamics	33	2		2	
Economic Geology	151	1		1	
Contracts and Specifications. .	68	1		1	
and Astronomy and Geodesy	58	3		3	
or two of					
(*b*) Hydraulics	31	2		2	
(*c*) Strength of Materials.	16	2		2	
(*e*) Railway Engineering. .	211	1		1	
(*k*) Sanitary Chemistry and Bacteriology	112	1		1	
Sanitary Engineering	113			1	
Thesis	215				

*Optional.

DEPARTMENT OF MINING ENGINEERING.

Department 2.

The course in Mining Engineering is intended to serve as a preliminary training for those who expect to practice the art of mining or metallurgy. In the first two years it differs very little from the course in civil enginering, in the third year some subjects peculiar to mining and metallurgy are taken up. In the fourth year the subjects are more particularly those of mining and metallurgy. By the choice of subject for thesis in the fourth year the student can follow his particular branch still further, and devote about one-quarter of the time in that year to the part of the studies which interests him most.

In general this course is designed to first give the student a good training in the parts of engineering essential to all branches such as surveying, drafting, etc., and then in the upper years to allow him to follow studies peculiar to mining engineering.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least six months' practical experience in work connected with mining, metallurgy or geology, for which they must have received regular wages. Certificate forms, giving full details as to acceptable classes of work, will be furnished on application and should be obtained by all students before entering employment.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	First Term hrs per wk.		Second Term hrs per wk.	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Surveying	205–206	1	9	1	
Statics	10	2		2	
Dynamics	11	2		2	
Elementary Chemistry	75	2		2	3
Modern Language	213–214	1		1	
Accounts	65	1		1	
Drawing	117		13		19

Second Year.

Vacation Work	216				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Surveying	207–208	1	8	1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Optics	197	1	2		
Hydrostatics	196			1	1
Inorganic Chemistry	79	1			
Organic Chemistry	87	1			
Engineering Chemistry	85			1	
Analytical Chemistry	81–82		9		3
Mineralogy	159–161	1	1	1	3
Geology	150	1		1	
Mining	170, 171	1			3
Metallurgy	178	1			
Modern Languages	213–214	1		1	
Banking and Finance	66	1		1	
Drawing	123		1		14

Third Year.

Subject	No.	First Term hrs. per wk.		Second Term hrs. per wk.	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	216				
Surveying and Levelling	209-210	1	9		
Theory of Construction	18	2			
Hydraulics	29	2		2	
Electricity	140	1		1	
Engineering Chemistry	94	1		1	
Analytical Chemistry	93	1	3	1	7
Assaying	173		3	1	3
Petrography	163	1	2	1	2
Economic Geology	151	2		2	2
Ore Deposits	155	1		1	
Mining	172	1	3	1	
Ore Dressing	182	1		1	
Ferro-Metallurgy	181	1		1	
Metallurgy (Non-ferrous metals)	179	1		1	
Limited Companies	67	1		1	
Drawing	128				8

Fourth Year.

Thermodynamics	34	1		1	
Electrochemistry		1		1	
Assaying	174	1	3		
Petrography	166	1	2	2	2
Geology, Archaean and Glacial	152	2	1	2	
Geology, Mining	153	1		1	
Mining	175	1		1	
Ore Dressing	184	1		1	
Metallurgy	180	1	3	1	3
Cost-Keeping, etc.	69	1		1	
Chemistry	176		6		6
Milling	141		3		3
Power			3		3
Design	215		3		3
Thesis			9		

DEPARTMENT OF MECHANICAL ENGINEERING.

Department 3.

The course in this Department is designed to meet the needs of those students who are intending to take up the work connected with Mechanical Engineering such as: the design of gas engines, steam engines, steam boilers, steam turbines, air compressors, etc.; the design and installation of the machinery connected with power plants and central stations, steam piping and other similar problems. The work is also so arranged that the student becomes somewhat familiar with the design of travelling cranes and mill buildings and similar problems connected with structural steel work.

Since the work of the mechanical engineer and of the electrical engineer are closely allied, the courses in these two departments in the first two years are identical and cover the subjects mentioned below.

In the third year the work becomes more specialized, the mechanical engineers paying more attention to heat engines of various types, and to mill building design and other work of similar nature. The study of electricity is continued and the student gets considerable practice in the mechanical and electrical laboratories.

In the fourth year the student devotes himself still more closely to his chosen work, placing the greater stress on thermodynamics and the theory and testing of heat engines, and problems in machine design. Much time is spent in the mechanical laboratories testing gas and steam engines and other machines. A portion of the time is devoted to electricity and the laboratory connected therewith.

Candidates for the degree in this department are required to present satisfactory evidence of having had at least eight months' practical experience in one of the principal trades connected with Mechanical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering, as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	First Term hrs. per wk.		Second Term hrs. per wk.	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Modern Language	213–214	1		1	
Accounts	65	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Magnetism and Electricity	135	2			
Electric Circuits	136			2	
Elementary Chemistry	75	2		2	
Drawing	120		20		20
Electricity	137		1½		1½

Second Year.

Vacation Work	216				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Dynamics	12	1		1	
Theory of Mechanism	25	2		2	
Steam Engines	38	1			
Strength of Materials	13	2		2	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Electricity	138–139	2	2½	2	2½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Banking and Finance	66	1		1	
Modern Language	213–214	1		1	
Drawing	123		12		19
Mechanical Laboratory	38		1		1
Chemistry	81		6		

Third Year.

Subject	No.	First Term hrs. per wk.		Second Term hrs. per wk.	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	216				
Mechanics of Machinery	26	3			
Machine Design	27	1	7½	1	7½
Thermodynamics	33	2		2	3
Heat Engines	39	1		1	
Hydraulics	29–30	2	3	2	
Theory of Construction	18	2			
Ferro-Metallurgy	181	1		1	
Magnetism and Electricity	142	2	4½	2	4½
Alternating Current	143			2	
Engineering Chemistry	94	1		1	
Limited Companies	67	1		1	
Photography	199	1	3		
Strength of Materials	15		1½		1½

Fourth Year.

Mill Building Design	24	1		1	
Cost-Keeping, etc.	69	1		1	
Machine Design	28	1		1	
And two of					
(*b*) Hydraulics	32	2		2	
(*c*) Strength of Materials	16	2		2	
(*d*) Thermodynamics	37	2		2	
Thesis	215				

Laboratory work in option selected.

DEPARTMENT OF ARCHITECTURE.

Department 4.

The instruction in this department is arranged to lay a broad foundation for the subsequent professional life of its graduates, and incidentally to prepare its students to be immediately useful in an architect's office. The curriculum has been arranged to meet the æsthetic and scientific needs of the profession, and includes History and Principles of Architecture, Freehand Drawing in pencil, ink and color, Architectural Design, Analysis and Criticism of Buildings, Mathematics, Statics, Strength and Elasticity of Materials, Theory of Construction and Heating and Ventilation.

The equipment of the department includes a working library of 1,000 volumes, a large file of periodicals, 2,500 photographs, 2,000 stereographic photos, 4,500 lantern slides, and a large collection of models and casts.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	First Term hrs. per wk. Lect.	First Term hrs. per wk. Lab'y.	Second Term hrs. per wk. Lect.	Second Term hrs. per wk. Lab'y.
Algebra	187	1		1	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Building Measurement	49	1	9	1	
Statics	10	2		2	
Elementary Chemistry	75	2		2	
History and Principles of Architecture	40	1		1	
French	213	1		1	
Accounts	65	1		1	
Drawing	120		15		24
Architectural Sketching					

Second Year.

Vacation Work	216				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Strength of Materials	13	2		2	
Engineering Chemistry	85	1		1	

Second Year.—Continued.

Subject		First Term hrs. per wk.		Second Term hrs. per wk.	
	No.	Lect.	Lab'y.	Lect.	Lab'y
Optics	197	1	1½		
Hydrostatics	196			1	1½
Architectural Design	46	1		1	
History of Architecture	41	1		1	
Orders of Architecture	45	1		1	
History of Ornament	43	1		1	
French	213	1		1	
Banking and Finance	66	1		1	
Drawing Architectural Design Architectural Sketching	123		23		23

Third Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y
Vacation Work	216				
Descriptive Geometry	131	1		1	
Acoustics	195	1	3	1	
History of Architecture	42	1		1	
History and Principles of Ornament	44	1		1	
Architectural Design	47	1		1	
Building Materials	50	2		2	
Design of Tall Buildings	51	1		1	
Theory of Construction	19	2			
Cements and Concrete	21	1		1	
Limited Companies	67	1		1	
Drawing Architectural Sketching Architectural Design	130		18		24
Strength of Materials	15		1		1
Photography	199	1	3		

Fourth Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y
Strength of Materials	16–17	2	6	2	6
Electricity	146	1		1	
Heating and Ventilation	53	1		1	
Sanitary Science	52	1		1	
Architectural Design	48	2	20	2	20
Contracts and Specifications	54	1		1	
Thesis	215		3		3

DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY.

Department 5.

The course in Analytical and Applied Chemistry is designed to furnish instruction suitable for those students who intend to practice chemistry as a profession, either as analysts or as works chemists.

SUBJECTS OF INSRTUCTION.

First Year.

Subject	No.	First Term hrs. per wk. Lect.	First Term hrs. per wk. Lab'y.	Second Term hrs. per wk. Lect.	Second Term hrs. per wk. Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Electricity and Magnetism	135	1		1	
Biology	61-63	2	3	2	3
Accounts	65	1		1	
Electric Circuits	136	1		1	
Elementary Chemistry	75	2		2	
Elementary Mineralogy	157	2			
German	214	1		1	
Drawing	119		8		8
Electricity	137		1		
Chemistry	78		16		16
Mineralogy	158		4		3
Inorganic Chemistry	77	1		1	

Second Year.

Electricity	138	2	2½		2½
Engineering Chemistry	85			1	
Industrial Chemistry	86	1		1	
Organic Chemistry	88	2		2	
Physical Chemistry	90	2		2	
Inorganic Chemistry	79	1			
Analytical Chemistry	80	1		1	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Geology	150	1		1	
Biology or	62	1	3	1	3
Calculus	190	2		2	
German	214	1		1	
Banking and Finance	66	1		1	
Chemistry	89		15		16
Mineralogy	162				1

Third Year.

Subject		First Term hs. per wk.		Second Term hrs. per wk.	
	No.	Lect.	Lab'y.	Lect.	Lab'y.
Electrochemistry	101–102	1	3	1	
Engineering Chemistry	94	1		1	
Industrial Chemistry	95	1		1	
Organic Chemistry A.	97	2		2	
Organic Chemistry B.	98			1	
Chemical Plant	96	1		1	
Ferro-Metallurgy	181	1		1	
Metallurgy	179	1		1	
Economic Geology	151	2		2	
Crystallography	167	1		1	
Limited Companies	67	1		1	
German	214	1		1	
Chemistry	91		17		24
Assaying	173		3		
Heat	198	1	1½		

Fourth Year.

Inorganic Chemistry	103	1		1	
Organic Chemistry	104	1		1	
Cost-keeping etc.	69	1		1	
And one of					
(*f*) Electrochemistry	108	2		2	
(*g*) Industrial Chemistry	106–107	1		1	
(*h*) Sanitary and Forensic Chemistry	110–111			1	
(*i*) Metallurgy	180	2		2	
Thesis	215				
Chemistry (dependent on option)					

DEPARTMENT OF CHEMICAL ENGINEERING.

Department 6.

In many industries there is a demand for a man who combines the technical knowledge of the mechanical engineer with a knowledge of chemistry. It is to fill this want that the course in Chemical Engineering is designed.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	First Term hrs. per wk.		Second Term hrs. per wk.	
		Lect.	Lab'y	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Electric Circuits	136			2	
Elementary Chemistry	75	2		2	
Inorganic Chemistry	77	1		1	
German	214	1		1	
Accounts	65	1		1	
Drawing	120		17		19
Electricity	137		1½		1½
Chemistry	78		3		

Second Year.

Vacation Work	216				
Calculus	190	2		2	
Strength of Materials	13	2		2	
Electricity	138–139	2	2½	2	2½
Engineering Chemistry	85			1	
Industrial Chemistry	86	1		1	
Organic Chemistry	88	1			
Physical Chemistry	90	2		2	
Inorganic Chemistry	79	1			
Optics	197	1	1½		
Hydrostatics	196			1	1½
German	214	1		1	
Banking and Finance	66	1		1	
Drawing	123		13		14
Chemistry	84		6		6

Third Year.

Subject	No.	First Term hrs. per wk Lect.	First Term hrs. per wk Lab'y.	Second Term hrs. per wk Lect	Second Term hrs. per wk Lab'y.
Vacation Work	216				
Theory of Construction	18	2			
Thermodynamics	33	2		2	
Electrochemistry	101–102	2	3		
Engineering Chemistry	94	1		1	
Organic Chemistry A	97	2		2	
Organic Chemistry B	98			1	
Industrial Chemistry	95	1		1	
Analytical Chemistry	92	1	11	1	13
Metallurgy	179	1		1	
Ferro-Metallurgy	181	1		1	
Chemical Plant	96	1		1	
Limited Companies	67	1		1	
German	214	1		1	
Machine Design	27	1	4½	1	4½
Drawing			2		
Assaying	173				3
Mechanical Laboratory					3

Fourth Year.

Hydraulics	29		2	2	3
Inorganic Chemistry	103	1		1	
Organic Chemistry	104	1		1	
Cost-keeping etc.	69	1		1	
And one of					
(*f*) Electrochemistry	108	2		2	
(*g*) Industrial Chemistry	106–107	1		1	
(*h*) Sanitary and Forensic Chemistry	110–111			1	
(*i*) Metallurgy	180	2		2	
Thesis	215				
Chemistry (dependent on option)					

DEPARTMENT OF ELECTRICAL ENGINEERING.

Department 7.

The course in Electrical Engineering is arranged to provide preliminary training for those who would follow any of the various lines of activity connected with electrical industry.

The first two years of the course are devoted to fundamental scientific principles, and incidentally more or less of their application to engineering problems in mechanical, civil, and electrical work. Many problems are solved in the drafting rooms by graphical methods. The third year includes further theoretical work, more particular attention being given to electrical and mechanical studies in theory, operation, and design. The fourth year is devoted to advanced work in alternating current theory and practise combined with similar study in thermodynamics or hydraulics.

A large amount of laboratory practise is provided, most of which belongs to the third and fourth years. In this last year most of the time is spent in laboratory investigations and studies resulting therefrom.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' practical experience in one of the principal trades connected with Electrical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSRTUCTION.

First Year.

Subject	No.	First Term hrs. per wk.		Second Term hrs. per wk.	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Magnetism and Electricity	135	2			
Electric Circuits	136			2	
Chemistry	75	2		2	
Modern Language	213–214	1		1	
Accounts	65	1		1	
Drawing	120		20		20
Electricity	137		1½		1½

Second Year.

Vacation Work	216				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Theory of Mechanism	25	2		2	
Steam Engines	38	1			
Electricity	138–139	2	2½	2	2½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Modern Language	213–214	1		1	
Banking and Finance	66	1		1	
Drawing	124		12		19
Chemistry	81		6		

Third Year.

Subject	No.	First Term hrs. per wk.		Second Term hrs. per wk.	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	216				
Mechanics of Machinery	26	3			
Machine Design	27	1	3¼	1	3¼
Hydraulics	29–30	2	3	2	
Thermodynamics	33	2		2	
Heat Engines	39	1		1	
Electrochemistry	101–102	2	3		
Magnetism and Electricity	142	4			
Alternating Current	143			2	
Electrical Design	145	1	2¼	1	2¼
Electrical Laboratory	144		6		6
Engineering Chemistry	94	1		1	
Metallurgy	181	1		1	
Limited Companies	67	1		1	
Photography	199	1			3
Machinery	35		2¼		2¼

Fourth Year.

Applied Electricity	146–147	3		3	
Cost-keeping etc.	69	1		1	
And one of					
(*b*) Hydraulics	32	2		2	
(*d*) Thermodynamics	37	2		2	
(*f*) Electrochemistry	108	2		2	
Thesis	215				

Laboratory work in Electricity and option selected.

OUTLINE OF COURSES OF INSTRUCTION.

ARCHITECTURE.

10. STATICS.

Required in Departments 1, 2, 3, 4, 6 and 7, Year I; 2 hours per week; both terms.

This course of lectures deals with forces in a single plane,and concerns chiefly the calculation of tension, compression and shearing stresses in frame structures and solid beams. It also deals with the consideration of problems relating to friction.

11. DYNAMICS.

Required in Departments 1, 2, 3, 4, 6, and 7, Year I; 2 hours per week; both terms.

Kinematics and dynamics of rigid bodies, motion of translation, acceleration, graphics, the laws of motion, impulse and momentum, work and energy, power of pumps, etc.

Text book:—Tutorial Dynamics—Briggs and Bryan.

12. DYNAMICS OF ROTATION.

Required in Departments 1, 2, 3, 6 and 7, Year II; 1 hour per week; both terms.

Angular motion, velocity and acceleration, moment of inertia, simple harmonic motion, the pendulum, centres of mass, suspension and percussion, the phenomena of rotating bodies with special reference to such as fly wheels, governors, etc.

Text book:—Dynamics of Rotation—Worthington.

13. STRENGTH OF MATERIALS.

Required in Departments 1, 2, 3, 4, 6 and 7, Year II; 2 hours per week; both terms.

Elasticity and strength of materials mathematically treated, including tension, compression and shear; the strength of pipes, boilers and riveted joints; stresses and deflections in beams and columns; torsion and shear in shafts; suddenly applied loads; repeated stresses; resilience.

Text book;—Mechanics of Materials—Merriman.

14. STRENGTH AND ELASTICITY OF MATERIALS.

Required in Departments 1 and 4, Year III; 1 hour per week; second term.

This course is intended to give the student in Civil Engineering an introduction to the experimental study of the strength and elasticity of materials. It is intended that he shall acquire some familiarity with the construction and operation of testing machines and with the properties of the ordinary building materials.

15. STRENGTH AND ELASTICITY OF MATERIALS.

Required in Department 3, Year III; 1 hour per week; both terms.

A laboratory course similar in most respects to the course required in Department 1, Year III, but more attention is paid to the investigation of the properties of the materials of special interest to Mechanical Engineers.

16. STRENGTH AND ELASTICITY OF MATERIALS.

Optional in Year IV.

Most of the work taken up is in connection with structures in which the stresses are statically indeterminate.

Reference books:—Modern Framed Structures—Johnson; Roofs and Bridges, Part IV—Merriman and Jacoby.

17. STRENGTH AND ELASTICITY OF MATERIALS.

Optional in Year IV.

A course of laboratory experiments intended to give the student practice in investigating the elastic and physical properties of irons, steels, timber, concrete and other building materials.

Reference book:—Materials of Construction—Johnson.

18. THEORY OF CONSTRUCTION.

Required in Department 1, Year III; 2 hours per week; both terms.

In the first term, the theory relating to the design of box and plate girders is covered fully, and the complete design of a plate girder span is worked out in the class and drafting rooms.

The second term is given chiefly to the design of a riveted truss highway span and a pin-connected truss railway span, the complete designs being made in the lecture and drafting rooms. Restrained, continuous and trussed beams complete the term's work.

19. THEORY OF CONSTRUCTION.

Required in Departments 2, 3, 4, and 6, Year III; 2 hours per week; first term.

The work is practically the same as that for Department 1 in the first term except that a runway girder is designed instead of a plate girder bridge span, and that restrained, continuous and trussed beams are discussed at the end of the term.

Text books:—Modern Framed Structures--Johnson, Bryan and Turneaure; Roofs and Bridges, Part III, Bridge Design—Merriman and Jacoby; Pocket Companion—Cambria Steel or Carnegie.

20. RETAINING WALLS, FOUNDATIONS AND DAMS.

Required in Department 1, Year IV.

This course of lectures is devoted to the design of the structures mentioned. Preparatory to the discussion of the practical aspects of the subject, and in order to gain familiarity with the fundamental principles involved, a large part of the first term is given over to the consideration of the theory of compound stress. The most approved forms of construction of retaining walls, footings, abutments, piers and dams are then described, and typical designs are worked out in the class and drafting rooms.

Text books and books of reference:—Retaining Walls for Earth—M. A. Howe; Walls, Bins and Grain Elevators—M. S. Ketchum; A Practical Treatise on Foundations—W. M. Patton; A Treatise on Masonry Construction—I. O. Baker; Design and Construction of Dams—E. Wegmann.

21. CEMENTS AND CONCRETE..

Required in Departments 1 and 4, Year III; 1 hour per week.

A short course of lectures on the testing of cements, the use of concrete plain and reinforced, and the theory of reinforced concrete.

22. CEMENTS AND CONCRETE.

Required in Department 4, Year IV; optional in Departments 1 and 3, Year IV.

Manufacture, testing and use of Portland cement; concrete and reinforced concrete; mathematical theory of reinforced concrete.

Reference books:—Reinforced Concrete—Buel and Hill; Principles of Reinforced Concrete Construction—Turneaure and Maurer; Concrete, Plain and Reinforced—Taylor and Thompson.

23. STEEL AND IRON.

Optional in Year IV.

In this course of lectures are discussed the relations between the composition of steels and irons and their physical properties. The effects of heat treatment and the constitution and structure as revealed by the microscope, are studied. The subjects taken up in Year III. are continued.

24. MILL BUILDING DESIGN.

Required in Department 3, Year IV.

The structural problems involved in the design of steel mill buildings are discussed in this course of lectures. Types of buildings, various styles of trusses, columns and details are described and the complete design of a steel mill building is worked out in the class and drafting rooms.

Text book:—Mill Building Design—Milo S. Ketchum.

25. THEORY OF MECHANISM.

Required in Departments 3 and 7, Year II; 2 hours per week; both terms.

This course of lectures treats of the motions of machines, the latter being assumed to be of sufficient strength to resist acting forces. The formation of machines is dealt with in a general way and investigations of the velocities of points and links are made. The design of gear teeth and the application of trains of gears are taken up, also problems in static equilibrium.

Problems are worked out in the drafting room in which the methods given are employed.

26. MECHANICS OF MACHINERY.

Required in Departments 3 and 7, Year III; 3 hours per week; one term.

In this course the questions dealt with are the construction of acceleration diagrams, the determination of the accelerations of various parts of machines, the kinetic energy of machines, the effect of the weights and accelerations of parts on the velocity of the flywheel and the proper weight of the latter to fulfil given conditions. The theory of various forms of governors is also fully taken up and the efficiency of machines. The discussion of the design of slide valves and gears is continued in this course.

Text books:—Mechanics of Machinery—Kennedy; Slide Valve Gears—Halsey.

27. Machine Design.

Required in Departments 3, 6, 7, Year III; 1 hour per week; both terms.

The lectures in this course deal principally with the applications of the principles of kinematics and the theory of the strength of materials to the design of machine parts, such as shafting, gearing, journals, clutches, etc.

In addition to the lecture course a considerable amount of time is spent in the drafting room where designs involving the above principles are worked out and the necessary calculations made. These designs are made as parts of some actual machine, such as an engine.

28. Machine Design.

Required in Departments 3 and 6, Year IV.

The lectures and practical work in this course are meant to supplement those of course 25 and deal with more difficult problems and designs. The design of a complete machine is taken up and detail drawings as well as an assembly drawing are made.

29. Hydraulics—General Course.

Required in Departments 1, 2, 3 and 7, Year III; 2 hours per week; both terms.

This is an introductory course of lectures in hydraulics and is devoted to the development and discussion of fundamental formulæ relating to the flow of water in pipes, the measurement of discharge by various methods, such as orifices and weirs, the conditions of flow obtaining in open channels, artificial and natural, and in pipes flowing partially full; together with other kindred subjects.

The object of this course is to provide the student with a good working knowledge of the fundamental principles of hydraulics; such as is useful in practical work, and is necessary to the intelligent investigation of more advanced problems, such as the design of turbines, water wheels and power plants generally.

30. Hydraulic Laboratory.

Required in Departments 1, 2, 3 and 7, Year III; 3 hours per week; one term.

The work in this course is intended to illustrate the lecture course given in hydraulics and to give the student some working acquaintance with the formulas and coefficients met with in practice. Experiments are made on the coefficients of velocity and discharge for orifices of different shapes and sizes and for weirs. The coefficients obtained are used with orifices and weirs in measuring the discharge through meters, nozzles, etc., which are next under examination. Experiments on the friction of water in pipes and fire hose and in elbows and bends are also made, and the friction factors and coefficients of friction are determined.

31. HYDRAULICS. TURBINES, PUMPS AND WATERWORKS SYSTEMS.

Optional in Year IV.

Following up the third year course in this subject the theory already acquired is applied to the solution of problems connected with branched pipes, water mains discharging at various points along their length, the effect of a dam on the water level at any point on a stream and numerous other problems.

The most important question considered and to which most of the lectures are devoted is the theory of turbines and centrifugal pumps, the effect of the design on the speed, discharge, power and efficiency being fully taken up.

Text books:—Hydraulic Motors, etc.—Bodmer; Centrifugal Pumps—Innes; Hydraulics—Merriman.

32. HYDRAULICS.

Optional in Departments 1, 3 and 7, Year IV.

The time spent in the laboratory in the fourth year is devoted to experimental work on turbines of various types and centrifugal and turbine pumps and other similar devices. This experimental work is arranged to illustrate the lectures on turbine and pump design. The experiments are made on two large turbine pumps used in the laboratory supply, as well as on apparatus specially designed for instruction.

Various methods of measuring water power and the efficiency of machines are also given.

33. THERMODYNAMICS.

Required in departments 3 and 7, Year III; Department 1, Year IV.

In this course of lectures the subject is treated in such a way as to make it of practical value and give a working acquaintance with the principles on which it is based. After the elementary ideas have been given and the proofs of the properties of Carnot's cycle, applications of the subject are made to the perfect gas and to saturated steam and to the various types of engines. Temperatures are taken from the air thermometer.

34. THERMODYNAMICS.

Required in Department 2, Year IV; 1 lecture per week; both terms.

This course is especially designed to give the Mining Engineer a working knowledge of thermodynamics as applied to the perfect gas so that he will be able to understand clearly the action of air compressors, etc. After deducing general principles, the efficiency of compressed air transmission and the relative merits of different types of compressors is discussed.

35. THERMODYNAMIC AND MECHANICAL LABORATORY.

Required in Departments 3 and 7, Year III; 3 hours per week; second term.

This laboratory course is designed to assist in a clearer understanding of thermodynamics, machine design and mechanics of machinery. The work in thermodynamics consists in the setting of slide valves, indicating engines, measuring the brake horse power, simple engine and boiler tests and the testing of gas and gasoline engines under various conditions. The mechanical laboratory work deals with the efficiency of belts and ropes as well as of several machines of simple construction. An examination of lubricating oils is also made by means of oil testing machines and other well-known devices. Experiments are also made on the balancing of reciprocating and rotating masses.

36. THERMODYNAMICS.

Optional in Year IV.

This is a continuation of the introductory course, the subject being here treated from a general standpoint and the idea of entropy and of the absolute scale of temperatures being introduced. The course includes the treatment of saturated and superheated vapours, gases, the flow of fluids, chimney and boiler efficiency and the theory of various engines and other appliances including air compressors, refrigerating machines, injectors and the various forms of link motions and radial valve gears.

Text books:—Thermodynamics—Peabody; Steam Tables—Peabody.

37. THERMODYNAMICS.

Optional in Departments 3 and 7, Year IV.

The work in this year is a continuation and extension of the work covered in the third year laboratory course. Careful tests are made of engines of various types such as simple, tandem, and cross-compound steam engines; steam turbines; refrigerating machines; air engine; injectors and steam pumps, etc.; and an application is made of Hirn's Analysis and the entropy diagram to the results obtained. A complete set of experiments is made on each machine and the result plotted so as to show clearly to the student the effect of various alterations in the adjustment of the engine on the resulting efficiency.

Several modern gas and gasoline engines and a gas producer give ample opportunity for the study of this type of engine, and facilities are provided for sampling the gas supply and exhaust.

Two experimental stacks and three boilers enable results to be obtained on boiler efficiency and chimney draft.

38. STEAM ENGINES.

Required in Departments 3 and 7, Year II; one hour per week; one term.

This course of lectures includes a discussion of the principles of action of the steam engine; also the theory and design of various simple forms of valve gears used in the operation of such engines.

A short course is given in the mechanical laboratories in connection with the above lectures which illustrates the principles of valves and valve gears.

39. HEAT ENGINES.

Required in Departments 3, 6 and 7, Year III; one hour per week, both terms.

This course in heat engines is intended for students in Mechanical Engineering, to be supplementary to the general course of lectures in thermodynamics given in the third year.

The principal commercial forms of heat engines are dealt with in a more or less descriptive manner; special attention is given to considerations affecting the design of the ordinary forms of steam engines, gas engines and oil engines.

ARCHITECTURE.

40. HISTORY OF ARCHITECTURE.

Required in Department 4, Year I; one hour per week; both terms.

In this course the development of architecture is treated very briefly and in an elementary manner, from the Pyramids of Egypt to the present, laying special emphasis on the Egyptian, Grecian and Western Asiatic work. The antique Greek and Roman orders are studied and the students are required to make rendered drawings in the studio of certain orders and elements. An attempt is made to develop the student's sense of proportion and in the latter part of the second term he is required to study a simple problem in design.

41. HISTORY OF ARCHITECTURE.

Required in Department 4, Year II; one hour per week; both terms.

The Classical, Early Christian, Byzantine and Romanesque styles of architecture are studied with the aid of the lantern. The student is required to become acquainted with the best examples in these styles in order that his sense of proportion and his taste may be developed and his knowledge of the different elements extended.

42. HISTORY OF ARCHITECTURE.

Required in Department 4, Year III; one hour per week; both terms.

In this course the work of the previous year is continued, with the study of Gothic and the Renaissance.

43. HISTORY OF ORNAMENT.

Required in Department 4, YearII; one hour per week; both terms.

In this course the development of Ornament is traced from the beginning through Egyptian, Assyrian, Grecian, Roman, Byzantine, Romanesque and Moresque styles. An attempt is made to analyze ornament of the best periods and to systematize the principles followed in form and color. The development and the types of mouldings are also studied.

44. HISTORY OF ORNAMENT.

Required in Department 4, Year III; one hour per week; both terms.

A continuation of the course in Ornament given to the Second Year. Instruction is given in lectures with the aid of the stereoptican. The students are required to become familiar with the characteristics and forms of the ornament used in the Gothic and Renaissance styles.

45. ORDERS OF ARCHITECTURE.

Required in Department 4, Year II; one hour per week; both terms.

Lectures on the Five Orders of Architecture, their affiliated forms and the other elements used in design. Simple problems in elementary design involving the use of the orders and other elements are set from time to time.

46. ARCHITECTURAL DESIGN.

Required in Department 4, Year II; one hour per week; both terms.

This course is given by means of individual instruction in the class room by criticisms of the solutions of diffierent problems set during the year and by a series of lectures. It is in this course that the student begins the serious study of design; continued practice in architectural drawing and rendering afford the training necessary to make the student a proficient draughtsman.

47. ARCHITECTURAL DESIGN.

Required in Department 4, Year III.

Theory and practice of Design.

This course is given by individual instruction in the studio and by lectures. The greater part of the course is devoted to problems in design and forms a continuation of the course given in the preceding year.

48. ARCHITECTURAL DESIGN.

Required in Department 4, Year IV.

The entire course is devoted to advanced academic training in designing the more monumental classes of buildings. The student is required to design and submit sketches and working drawings of some subject to be selected by himself.

49. BUILDING MEASUREMENT.

Required in Department 4, Year I; 1 hour per week; both terms.

In this course of lectures the principles of measurements and mensuration with special reference to buildings will be discussed. With this is combined 4½ hours per week practice in measurements of existing buildings, quantities, etc.

50 BUILDING MATERIALS.

Required in Department 4, Year III; 2 hours per week; both terms.

The structural and aesthetic value of the various building materials.

51. DESIGN OF TALL BUILDINGS.

Required in Department 4, Year III.

The structural features particularly incident to tall buildings are taken up, such as the discussion of deep foundations, grillages, arrangement of columns and beams, fire-proofing, wind bracing, details, etc.

Designs of typical building members such as footings, columns, girders, etc., are worked out in the class and drafting rooms.

Text book:—Architectural Engineering—J. K. Freitag; Skeleton Construction in Buildings—W. H. Birkmire.

52. SANITARY SCIENCE.

Required in Department 4, Year IV; 1 hour per week; both terms.

Modern plumbing, its design and installation.

53. HEATING AND VENTILATING.

Required in Department 4, Year IV; 1 hour per week; both terms.

The design of different systems, where they should be used, heating specifications, etc.

54. CONTRACTS AND SPECIFICATIONS.

ASTROMONY AND GEODESY.

55. ASTRONOMY, ELEMENTARY.

Required in Department 1, Year II; 1 hour per week; both terms.

A course in descriptive Astronomy, explaining the ordinary astronomical terms, and describing the various celestial bodies and their motions. In the evenings opportunity will be given for identifying the stars and for observing with telescopes.

Text book:—Introduction to Astronomy—F. R. Moulton.

56. ASTRONOMY AND GEODESY.

Required in Department 1, Year III. 2 hours per week.

The course of lectures deals with the determination of time, latitude, longitude and azimuth, by methods adapted to the use of the surveyor's transit and the sextant. It is designed to fulfil the requirements of the final examinations for Ontario and Dominion Land Surveyors.

In Geodesy an account is given of the principles and methods of a secondary triangulation survey, also of the principles involved in the North-West system of survey.

Text book.—Practical Astronomy as applied to Geodesy and Navigation, Doolittle; Nautical Almanac, 1911.

57. FIELD WORK.

Required in Department 1, Year III, 8 hours per week; first term.

The practical work in this subject comprises observations in the field with the transit and sextant for the determination of time, latitude and azimuth by the methods described in the lectures.

58. ASTRONOMY (Advanced).

Required in Department 1, Year IV.

The lecture course in this subject comprises the theory and adjustment of the instruments used in connection with a geodetic survey; the methods of taking and reducing observations for time, longitude, latitude, and azimuth, with the precision required on such a survey; and other matters relating to these subjects.

59. GEODESY AND METROLOGY.

Required in Department 1, Year IV.

The lecture course includes a description of the methods of measuring base lines, and the angles of a triangulation; the geometry of the spheroid with applications to geodetic problems; the computation of geodetic positions; the solution of large triangles on the earth's surface, and the adjustment of a triangulation; trigonemetric and precise spirit levelling; the determination of the figure earth by arc measurements, and by the pendulum; the theory of map projections, etc.

60. ASTRONOMY ,GEODESY AND METROLOGY.

Optional in Year IV.

The practical work in the above subjects includes the observation of meridian transits for time and longitude determinations, and of prime vertical transits for latitude, with the astronomical transit instrument; the observation of meridian zenith distances of stars, and of azimuths at elongation for latitude, with the alt-azimuth; theodolite observations for azimuth; observations for latitude with the zenith telescope; the investigation of the constants of the instruments used, and the reduction of all observations; the measurement of a base line with the steel tape, and the determination of the constants of the tape; the measurement of the angles of a triangulation and the adjustment of the angles of a network of triangles, etc.

BIOLOGY.

61. ELEMENTARY BIOLOGY.

Required in Department 5, Year I; optional in Department 1, Year III; 2 hours per week; both terms.

A course of two lectures a week throughout the session is designed as an introduction of the whole range of biological studies. After a sketch of the scope and objects of these, the lectures will treat (*a*) of the fundamental principles of biology, as illustrated by the simplest animals and plants; (*b*) of typical forms of higher plants in ascending order; (*c*) of typical forms of animals in a similar way; and (*d*) of the structure and functions of the human body. Students are recommended to make use of the Biological Museum in connnection with this coruse of lectures. For reference; Jeffrey Parker, Elementary Biology; Ramsay Wright, High School Zoology; Atkinson, Elementary Botany; Huxley, Lessons in Elementary Physiology.

62. ADVANCED BIOLOGY.

Optional in Department 5, Year II.

A course of instruction in the Morphology and Physiology of Bacteria, Moulds and Yeast Fungi.

63. ELEMENTARY BIOLOGY.

Required in Department 5, Year I; 3 hours per week; both terms.

An elementary course of laboratory work on the general structure and identification of plants and animals, and the use of the microscope in the examination of tissues and products.

BUSINESS.

65. ACCOUNTING.

Required in Year I; 1 hour per week; both terms.

The principles of accounting; illustrated by typical accounts.

66. BANKING AND FINANCE.

Required in Year II; 1 hour per week; both terms.

Money and the instruments of credit; bond issues, loans, sinking funds, etc.

67. LIMITED COMPANIES.

Required in Year III; 1 hour per week; both terms.

Partnerships; the history and development of the limited liability company; the Companies Acts; Company finance.

68. CONTRACTS AND SPECIFICATIONS.

Required in Departments 1 and 4, Year IV.

Contract law; principles of specifications.

69. COST-KEEPING, ETC.

Required in Departments 2, 3, 5, 6, and 7, Year IV.

Works management, accounts, analysis of costs, reports.

CHEMISTRY.

75. ELEMENTARY CHEMISTRY.

Required in Departments 1, 2, 3, 4, 5, 6, and 7; Year I; 2 hours per week; both terms.

A lecture course in elementary chemistry dealing with the metals and non-metals with experimental illustrations.

Text book:—Briefer Course—Remsen.

76. ELEMENTARY CHEMISTRY.

Required in Departments 2 and 6, Year I; 3 hours per week; second term.

A laboratory course to illustrate the use of the sensitive balance, to verify some of the laws which form the basis of the science, and to serve as an introduction to quantitative laboratory methods. Instruction given as required before each period.

77. INORGANIC CHEMISTRY.

Required in Departments 5 and 6, Year I; 1 hour per week; both terms.

A lecture course on the elements and important inorganic compounds, supplementing course 75.

Text book:—Introduction to General Inorganic Chemistry—Alex. Smith.

78. INORGANIC CHEMISTRY.

Required in Department 5, Year I; about 17 hours per week; both terms.

A laboratory course of quantitative experiments illustrating the use of the sensitive balance, and confirming the fundamental laws of chemistry; qualitative inorganic analysis; quantitative analysis of pure salts; inorganic preparations; molar weight determinations.

Text book:—Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

79. INORGANIC CHEMISTRY.

Required in Departments 2, 5 and 6, Year II; 1 hour per week; first term.

A lecture course on the chemistry of the metals; a continuation of course 75.

80. ANALYTICAL CHEMISTRY.

Required in Department 5, Year II; Departments 2 and 6, Year III; 1 hour per week; both terms.

A lecture course on the principles of chemical analysis; select gravimetric and volumetric methods; technical analysis.

81. ANALYTICAL CHEMISTRY.

Required in Departments 1, 2, 3, 4 and 7, Year II; 6 hours per week; one term.

Laboratory practice in elementary qualitative and quantitative analysis.

Text book:—A Smaller Chemical Analysis—Newth.

82. ANALYTICAL CHEMISTRY.

Required in Department 2, Year II; 3 hours per week; both terms.

A laboratory course in the gravimetric determination of metals and acids, with elementary volumetric analysis.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

83. ANALYTICAL CHEMISTRY.

Required in Department 5, Year II; 14 hours per week; 18 weeks.

A laboratory course comprising gravimetric and volumetric methods, acidimetry and alkalimetry.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

84. ANALYTICAL CHEMISTRY.

Required in Department 6, Year II; 6 hours per week; both terms.

A laboratory course in qualitative and elementary quantitative chemical analysis; inorganic preparations.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

85. ENGINEERING CHEMISTRY.

Required in Departments 1, 2, 3, 5, 6 and 7, Year II; 1 hour per week; second term.

A lecture course consisting of a study of the industrial production and application of heat and light, and of the chemistry of fuel and the products of combustion.

86. INDUSTRIAL CHEMISTRY.

Required in Departments 5 and 6, Year II; 1 hour per week; both terms.

A lecture course on the manufacture of salts, acids, alkalies and inorganic chemicals.

Text book:—Industrial Chemistry—Thorp.

87. ORGANIC CHEMISTRY.

Required in Departments 1, 2, 3 and 7, Year II; 1 hour per week; first term.

A lecture course in elementary organic chemistry.

Text book:—Theoretical Organic Chemistry—Cohen.

88. ORGANIC CHEMISTRY.

Required in Departments 5 and 6, Year II; 2 hours per week; both terms.

A lecture course dealing with the aliphatic compounds.

Text book:—Theoretical Organic Chemistry—Cohen.

89. ORGANIC CHEMISTRY.

Required in Department 5, Year II; 14 hours per week; 8 weeks.

A laboratory course in organic preparations in the aliphatic series.

90. PHYSICAL CHEMISTRY.

Required in Departments 5 and 6, Year II; 2 hours per week; both terms.

A course of lectures on the elements of chemical mechanics, and the theory of solutions.

91. ANALYTICAL CHEMISTRY.

Required in Department 5, Year III; 19 hours per week; 16 weeks.

A laboratory course on the technical analysis of iron and steel alloys, ores, furnace products, ceramic materials, foods, gases, fuels, etc.

92. ANALYTICAL CHEMISTRY.

Required in Department 6, Year III; 11 hours per week; first term; 13 hours per week, second term.

A laboratory course in volumetric and technical analysis.

93. ANALYTICAL CHEMISTRY.

Required in Department 2, Year III; 5 hours per week; both terms.

A laboratory course on the technical analysis of ores and furnace products.

94. ENGINEERING CHEMISTRY.

Required in Departments 1, 2, 3, 5, 6 and 7, Year III; Department 4, Year II; 1 hour per week; both terms.

A lecture course on the application of chemistry to engineering problems; air, water, sewage, the materials of construction, explosives, etc.

95. INDUSTRIAL CHEMISTRY.

Required in Departments 5 and 6, Year III; 1 hour per week; both terms.

A lecture course on petroleum and its products, coal tar and its products, the destructive distillation of wood; fats, oils, soap, sugar, starch and gums; fermentation industries, etc.

Text book:—Industrial Chemistry—Thorp.

96. CHEMICAL PLANT.

Required in Departments 5 and 6, Year III; 1 hour per week; both terms.

A lecture course on the machinery and plant used in chemical manufacturing.

97. ORGANIC CHEMISTRY (A).

Required in Departments 5 and 6, Year III; 2 hours per week; both terms.

A lecture course on the aromatic series.

Text book:—Theoretical Organic Chemistry—Cohen.

98. ORGANIC CHEMISTRY (B).

Required in Department 5 and 6, Year III; 1 hour per week; second term.

A lecture course on stereoisomerism, desmotropism, etc.

99. ORGANIC CHEMISTRY.

Required in Department 5, Year III; 19 hours per week; 9 weeks.

A laboratory course in organic preparations in the aromatic series; organic analysis.

100. ORGANIC CHEMISTRY.

Required in Department 6, Year III; 17 hours per week; 4 weeks.

A laboratory course in organic preparations.

101. ELECTROCHEMISTRY.

Required in Departments 5, 6 and 7, Year III; 2 hours per week; first term.

A lecture course on elementary electrochemistry, illustrated by experiments.

102. ELECTROCHEMISTRY.

Required in Departments 5, 6 and 7, Year III; 3 hours per week; first term.

A laboratory course in quantitative measurements to accompany course 101.

103. INORGANIC CHEMISTRY.

Required in Departments 5 and 6, Year IV; 1 hour per week; both terms.

A lecture course on chemical theory.

104. ORGANIC CHEMISTRY.

Required in Departments 5 and 6, Year IV; 1 hour per week; both terms.

A lecture course on advanced organic chemistry.

105. ORGANIC CHEMISTRY.

Required in Departments 5 and 6, Year IV.

A laboratory course in advanced organic chemistry.

106. INDUSTRIAL CHEMISTRY.

Optional in Departments 5 and 6, Year IV.

A lecture course on selected subjects in chemical technology.

107. INDUSTRIAL CHEMISTRY.

Optional in Departments 5 and 6, Year IV.

A laboratory course in indusrtial problems.

108. ELECTROCHEMISTRY.

Optional in Departments 5, 6 and 7, Year IV; 2 hours per week; both terms.

An advanced lecture course on the theory of solutions and electrolysis, and the application to the practice of electro-deposition and electrolytic refining of metals. The course also includes lectures on the electric furnace with special consideration of efficiency.

Text books:—Electrometallurgy—Borchers; Electrochemistry—Le Blanc; Electrochemistry—Luepke.

109. ELECTROCHEMISTRY.

Optional in Departments 5, 6 and 7, Year IV.

A laboratory course accompanying course 108.

110. SANITARY AND FORENSIC CHEMISTRY.

Optional in Departments 5 and 6, Year IV; 1 hour per week; second term.

A lecture course on the composition and examination of air, water and food; poisons and their detection.

111. SANITARY AND FORENSIC CHEMISTRY.

Optional in Departments 5 and 6, Year IV.

A laboratory course accompanying course 110.

112. SANITARY CHEMISTRY AND BACTERIOLOGY.

Optional in Department 1, Year IV.

A lectures and laboratory course on water supply and sewage disposal.

113. SANITARY ENGINEERING.

Optional in Department 1, Year IV.

A lecture course in which consideration is given to the problems of water supply and sewage disposal as viewed by the engineer.

DESCRIPTIVE GEOMETRY AND DRAWING

115. DESCRIPTIVE GEOMETRY.

Required in Departments 1, 2, 3, 6 and 7, Year I; 1 hour per week; both terms.

This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solution of problems relating to straight lines and planes.

116. DESCRIPTIVE GEOMETRY.

Required in Department 4, Year I; 1 hour per week; both terms.

This course of lectures deals chiefly with the principles of orthographic and oblique projection and the application of such principles to the solution of problems relating to straight lines and planes, special reference being made to the determination of shades and shadows.

117. DRAWING.

Required in Departments 1 and 2, Year I; about 16 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; the plotting of original surveys; measured drawings.

118. DRAWING.

Required in Department, 4 Year I; about 15 hours per week.

Copying from the flat, lettering, topography, freehand drawing in black and white, both from copies and models; the graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings. Elements and principles of Architecture.

119. DRAWING.

Required in Department 5, Year I; about 9 hours per week.

Copying from the flat, lettering, measured drawings.

120. DRAWING.

Required in Departments 3, 6 and 7, Year I; about 20 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings.

121. DESCRIPTIVE GEOMETRY.

Required in Departments 1, 2, 3, 6 and 7, Year II; 1 hour per week; both terms.

This course of lectures is a continuation of the work taken in the first year with the following additions: Problems relating to curved surfaces, principles of shades and shadows, and perspective.

122. DESCRIPTIVE GEOMETRY.

Required in Department 4, Year II; 1 hour per week both terms.

This course of lectures is a continuation of the work taken in the First Year with the addition of problems relating to curved surfaces, Shades, Shadows, and Perspective.

123. DRAWING.

Required in Departments 1 and 2, Year II; Department 1, about 10 hours per week; Department 2, about 6 hours per week; both terms.

Coloring and shading as applied to both topographical and construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows, and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

124. DRAWING.

Required in Departments 3 and 7, Year II; about 10 hours per week.; both terms.

Coloring and shading as applied to construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows, and perspective; solution of problems in optics, theory of mechanism and strength of materials; measured drawings; elementary design.

125. DRAWING.

Required in Department 4, Year II; about 18 hours per week; both terms.

Coloring and shading as applied to construction drawings. Freehand drawing, including water colors and monochrome; exercises from the orders of architecture; problems in descriptive geometry, relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

126. DRAWING.

Required in Department 6. Year II.

Same as Department 3, with exception that theory of mechanism is not included.

127. DESCRIPTIVE GEOMETRY.

Required in Department 1, Year III. 1 hour per week; one term.

This course of lectures deals with spherical projections, the principles of map making, and the graphical solution of spherical triangles.

128. DRAWING.

Required in Department 1, Year III. About 12 hours per week.

Principles of map making, spherical projection, plotting of original surveys relating to topographical and railway work; problems in thermodynamics and theory of construction; original design of various structures; measured drawings.

129. DRAWING.

Required in Department 2, Year III; 4½ hours per week.

Plotting of original surveys, relating to topographical and railway work and mining; problems in thermodynamics and theory of construction; original design; measured drawings.

130. DRAWING.

Required in Department 4, Year III; about 21 hours per week.

Problems in descriptive geometry, shades ,shadows and perspective; problems in thoery of construction; advanced work in water colors and monochrome; original design including framed structures; measured drawings.

131. DESCRIPTIVE GEOMETRY.

Required in Department 4, Year III; 1 hour per week; first term.

Advanced work in shades and shadows and perspective.

ELECTRICITY.

135. MAGNETISM AND ELECTRICITY.

Required in Departments 3, 5, 6 and 7, Year I; 2 hours per week; first term.

A course of lectures on general principles relating to magnetism, electricity, electromagnetism, electrostatics, etc., illustrated largely from engineering apparatus.

Text book:—Elementary Electricity and Magnetism—S. P. Thompson

136. ELECTRIC CIRCUITS.

Required in Departments 3, 5, 6 and 7, Year I; 2 hours per week; second term.

This course of lectures concerns chiefly fundamental principles relating to electric circuits and leads to consideration of such problems as the distribution of electric energy through lines and networks and the division of load between generators.

Text Book:—Electrical Problems—Hooper and Wells.

137. ELECTRICITY.

Required in Departments 3, 5, 6 and 7, Year I; 3 hours alternate weeks; both terms.

A laboratory course of experiments, given in logical order, designed to demonstrate fundamental principles in connection with the generation and flow of currents in electric circuits. The work is associated with the lecture courses, magnetism and electricity, and electric circuits. (135, 136).

138. ELECTRICITY.

Required in Departments 3, 5, 6 and 7, Year II; 2 hours per week; both terms.

Deals with the theory of electrical measurements, and detailed study of various methods applicable under different conditions in engineering practice to the measurement of resistance, current, potential difference, power and energy; calibration of commercial measuring instruments. The effect of choice of conditions of measurement on the accuracy of the result is considered.

Text book:—Electrical Measurements—Carhart and Patterson.

139. ELECTRICAL LABORATORY.

Required in Departments 3, 5, 6 and 7, Year II; 2½ hours per week; both terms.

This laboratory course is closely associated with the lecture course 138 on electricity for the second year. The more important and useful methods of testing generators and circuits for electromotive force, resistance, current, grounds, etc,. are practised, often under conditions such as occur in practice. The work also includes methods of calibration of measuring instruments for voltage, current, power and energy, and certain studies of properties of incandescent lamps.

140. ELECTRICITY.

Required in Department 2, Year III; Departments 1 and 4, Year IV.

A course designed to fit the requirements of non-electrical students. A study of essential principles is followed by disscusion of electrical apparatus, plants, power transmission railways, etc.

Text book:—Elementary Electricity and Magnetism—Jackson.

141. POWER.

Required in Departments 2 and 6, Year IV.

Under the name "Power" a number of operating experiments are arranged to afford mining and chemical engineering students some familiarity with measuring instruments, direct and alternating current machinery.

142. MAGNETISM AND ELECTRICITY.

Required in Departments 3 and 7, Year III; 2 hours per week; both terms.

A course of lectures on theory of magnetism and magnetic circuits, theory of direct current generators, motors, etc.

Text book:—Elements of Electrical Engineering—Franklin and Esty.

143. ALTERNATING CURRENT.

Required in Departments 3 and 7, Year III; 2 hours per week; second term.

A first course of lectures on alternating current, covering principles of measurement and leading to the analytical and graphical treatment of the simpler problems relative to alternating current circuits and machinery.

Text book:—Elements of Electrical Engineering—Franklin and Esty.

144. ELECTRICAL LABORATORY.

Required in Departments 3 and 7, Year III.

This laboratory course is intended to afford the student an opportunity to become familiar with principles involved in continuous current shunt, series and compound wound generators and motors, and, to some extent, alternating current circuits and machinery. Other sections of the work deal with the magnetic properties of iron and steel, and study of iron losses in transformers and generators.

The course is arranged to stand in close relation to the lecture courses in the subjects of magnetism and electricity and alternating current (142, 143) for Year III, and to certain design work (145).

145. ELECTRICAL DESIGN.

Required in Department 7, Year III.

A course of lectures dealing with design of electric machinery and plants, accompanied by designs to be worked out in the design room.

References:—Dynamo-electric Machinery—S. P. Thompson; Electric Machine Design—Parshall and Hobart.

146. APPLIED ELECTRICITY.

Required in Department 7, Year IV.

This course deals by analytical and vector methods with the theory of alternating current circuits and machinery. Applications of theory are considered with regard to transformers, single and polyphase generators, synchronous motors and rotary converters, induction and commutating series motors, transmission lines, wave analysis, etc.

Text books:—Alternating Currents—Franklin and Williamson; Elements of Electrical Engineering—Franklin and Esty.

147. ELECTRICAL LABORATORY.

Required in Department 7, Year IV in connection with 146.

This laboratory course involves a thorough study of principles and properties of single and polyphase circuits and apparatus. Both vector and analytical methods are applied to the solution of problems based on tests made on laboratory machines.

The work deals mainly with constant voltage and constant current transformers, single and polyphase alternators, synchronous motors, rotary converters, induction and single phase commutating motors, transmission line, etc. The work does not consist only of factory tests, but is designed to lead the student to apply theory to practice as illustrated in the apparatus under test ,with a view to an exact understanding of methods and an appreciation of limitations under many conditions. Free use is made of the oscillograph as a necessary device for "seeing" conditions under investigation. The best commercial measuring instruments are availabe.

GEOLOGY.

150. GEOLOGY. (Elementary).

Required in departments 2 and 5, Year II; Department 1, Year III; 1 hour per week; both terms.

This course deals chiefly with historical geology with special reference to Canadian formations.

Reference books:—Introduction to Geology—Scott; Text Book of Geology—Dana.

151. ECONOMIC GEOLOGY. (Including Dynamical and Structural Geology.)

Required in Department 2, Year III; 2 hours per week; both terms; and Department I, Year IV.

A study of the more important economic rocks, minerals and ores with their geological associations. Special attention paid to Canadian deposits.

152. ADVANCED GEOLOGY.

Required in Department 2, Year IV.

(A) Pre-Cambrian Geology,—An account of the Keewatin, Huronian and Laurentian rocks of Canada, with their distribution, structural relations and economic features, and briefer accounts of similar formations in the United States and elsewhere. Works of Reference, Reports ofthe United States and Canadian Geological Surveys, of the Bureau of Mines of Ontario, etc.

(B) Pleistocene Geology.—Lectures on the formation and distribution of the drift deposits of North America, with brief references to other regions. Glacial, Interglacial and Post glacial beds are described, changes of climate are discussed with their probable causes, and the economic features of the clays, sands and gravels are pointed out. A weekly excursion is made during October and November to points of interest near Toronto, which is the centre of the most important development of Pleistocene in America.

(C) Physiography.—A course of lectures on the surface forms of the earth, with the geological factors which have produced them. The broad features of the earth, its plains, tablelands, hills, valleys, mountains, oceans, rivers and lakes are discussed in a general way, methods of topographical surveys and mapping are referred to, and the chief physiographic areas of Canada are described.

153. MINING GEOLOGY.

Required in Department 2, Year IV.

A course of lectures on geological problems associated with mining, typical mining regions in Canada, the United States elsewhere being discussed from the geological side. Works of reference, Mineral Industry and the books mentioned under (A).

154. GEOLOGICAL EXCURSIONS.

Required in Department 2, Year IV.

Trips to points of interest in the vicinity of Toronto.

155. ORE DEPOSITS.

Required in Department 2, Year III; 1 hour per week; both terms.

Discussion of the origin and classification of ore deposits in a general way, the mode of occurrence of the chief metals, and statistics of production, special attention being given to the metals mined in Canada.

156. ECONOMIC GEOLOGY.

Required in Department 2, Year III; 1 hour per week; both terms.

Laboratory work on ores, manner of occurrence, vein structure, etc. Geological maps of typical mining regions.

MINERALOGY.

157. ELEMENTARY MINERALOGY.

Required in Department 5, Year I, and in Department 2, Year II; 2 lectures per week; first term.

After introducing the student to the chief chemical, physical and crystallographic characteristics of minerals, the course becomes descriptive and deals with about one hundred of the minerals most important from the industrial or scientific point of view.

TEXT books:—Minerals and how to study them—Dana; Text Book of Mineralogy—Dana.

158. MINERALOGY.

Required in Department 5, Year I; 4 hours per week; first term. 3 hours per week; second term.

Introduction to blow-pipe analysis, determination of minerals by inspection and physical tests.

Text books:—Text book of Mineralogy—Dana; Mineral Tables—Eakle; Determinative Mineralogy and Blow-Pipe Analysis—Brush-Penfield.

159. PRIMARY MINERALOGY.

Required in Department 1, Year II; 2 lectures per week; first term. A very brief introduction to the study of minerals and rocks.

Text books:—Minerals and how to study them—Dana; Handbook of Rocks—Kemp.

160. MINERALOGY.

Required in Department 2, Year II; 1 hour per week; first term; 3 hours per week; second term. Determination of minerals by inspection and by means of physical tests; introduction to blow-pipe practice.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy and Blow-pipe Analysis—Brush-Penfield.

161. MINERALOGY.

Required in Department 1, Year II; 1 hour per week; first term; 2 hours per week, second term. Determination of minerals by inspection and by means of physical tests; study of common rock types and their identification.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

162. MINERALOGY.

Required in department 5, Year II; 1 hour per week, second term. Introduction to the study of rocks; determination of minerals and rocks by means of tables based on the physical properties.

Text books:–Mineral Tables–Eakle; Handbook of Rocks:–Kemp.

163. ELEMENTARY PETROGRAPHY.

Required in Department 2, Year III; lecture per week.

A course of lectures and laboratory work introducing the student to the macroscopic study of rocks.

Text books:—Handbook of Rocks—Kemp; Rocks and rock minerals—Pirsson.

164. MINERALOGY.

Required in Department 2, Year III; 2 hours per week. Determination of minerals by means of the blow-pipe and physical properties.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy and Blow-Pipe Analysis—Brush-Penfield.

165. GENERAL PETROGRAPHY.

Required in Department 2, Year IV.

Study of the chief rock-forming minerals and of some phases of petrography not covered in the course of the previous year.

166. PETROGRAPHY:—Required in Department 2, Year IV. Study of the chief rock-forming minerals, of rocks in thin sections and in hand specimens.

Text books:—Rocks and Rock Minerals—Pirsson; Minerals in Rock Sections—Luquer.

167. CRYSTALLOGRAPHY.

Required in Department 5, Year III; 1 lecture per week.

A course devoted to lectures and practical work on the geometical and optical properties of crystals, preparing the student for the study of rocks in thin sections and for the examination of crystallized substances, natural and artificial, under the polarizing microscope.

MINING, METALLURGY AND ORE DRESSING.

170. MINING.

Required in Department 2, Year II; 1 hour per week; second term.

An introduction to the study of mining and ore dressing methods.

171. MINING AND ORE DRESSING.

Required in Department 2, Year II; 3 hours per week; second term.

Introductory work with rock-drills and various ore dressing appliances.

172. MINING.

Required in Department 2, Year III.

General mining methods.

173. ASSAYING.

Required in Departments 2, 5 and 6, Year III.

Assaying of various ores for gold, silver, lead and copper.

174. ASSAYING.

Required in Departments 2, 5 and 6, Year IV.

Continuation of the work of Year III.

175. MINING.

Required in Department 2, Year IV.

Special mining methods, examinations, reports.

176. MILLING.

Required in Department 2, Year IV.

Advanced work with ore dressing appliances, complete mill tests.

177. METALLURGY.

Required in Department 2, Year IV.

Experiments in the pyro-metallurgy of copper and lead, refining of base bullion, cyanide tests.

178. METALLURGY.

Required in Departments 2, 5 and 6, Year II; 1 hour per week; one term.

An introduction to the study of general metallurgy.

179. METALLURGY.

Required in Departments 2, 5 and 6, Year III.

General metallurgy of gold, silver, lead and copper.

180. METALLURGY.

Required in Departments 2, 5 and 6, Year IV.

Advanced studies in the metallurgy of gold, silver, copper and lead, etc.

181. METALLURGY OF IRON AND STEEL.

Required in Departments 1, 2, 3, 5, 6, and 7, Year III.

The physical properties of iron and steel and the circumstances that influence the strength, etc. of iron. The different modes of manufacture of iron and steel and the effect of different processes of making on the resulting products. Explanations of specifications for iron and steel adopted by engineers.

182. ORE DRESSING.

Required in Department 2, Year III.

183. MINING AND ORE DRESSING.

Required in Department 2, Year III.

Continuation of work of Year II. Experimental work to determine falling ratios, magnetic permeability of minerals, etc., sampling of mill products and ore in place.

184. ORE DRESSING.

Required in Department 2, Year IV.

MATHEMATICS.

187. ALGEBRA.

Required in Departments 1, 2, 3, 4, 5, 6, and 7, Year I; 2 hours per week; both terms.

Simple equations of one, two and three unknown quantities; quadratic equations of one and two unknown quantities; elementary treatment of variation, proportion and progressions; interest forms and annuities, permutations, combinations, binomial theorem.

Text book:—Intermediate Algebra—DeLury.

188. ANALYTICAL GEOMETRY.

Required in Departments 1, 2, 3, 4, 5, 6, and 7, Year I; 1 hour per week; both terms.

The course in Elementary Analytical Geometry covers the more familiar propositions in connection with the straight line, circle, parabola, ellipse and hyberbola. The subject is treated so as to illustrate the general methods of analytical geometry.

189. TRIGONOMETRY, PLANE.

Required in Departments 1, 2, 3, 4, 5, 6, and 7, Year I; 2 hours per week; both terms.

Trigonometrical ratios with their relations to one another, sines, etc., of the sum and difference of angles with deduced formulæ, solutions of triangles, expressions or the area of triangles, radii of circumscribed, inscribed and escribed circles.

Text book:—Practical Trigonometry—Plane and Fawdry.

190. CALCULUS, DIFFERENTIAL AND INTEGRAL.

Required in Departments 1, 2, 3, 4, 6, and 7, Year II; Department 5, Year II, optional; 2 hours per week; both terms.

This is an elementary course in the infinitesimal calculus, but adequate to afford a knowledge of the character and methods of the subject and to enable students in chemistry, engineering, etc., to understand such of their text books as introduce the calculus.

191. TRIGONOMETRY, SPHERICAL.

Required in Department 1, Year II; 1 hour per week; first term.

The course of lectures includes the derivation of formulæ and their application to the solution of triangles and to practical problems.

Text book:—Spherical Trigonometry—Todhunter and Leatham.

192. LEAST SQUARES, METHOD OF.

Required in Department 1, Year III; 1 hour per week; first term.

The course of lectures includes: The general principles of probability, the law of error, direct measurements of equal and diffierent weights; mean square and probable errors; indirect measurements; conditioned observations; applications to empirical constants and formulæ, etc.

Text book:—Least Squares—Merriman.

TECHNICAL PHYSICS.

195. ACOUSTICS.

Required in Department 4, Year III.

Wave motion, propagation, reflection and transmission of sounds Laws of vibrating strings, pipes and forks. Velocity of sound. Musical scales. Absorption of sound by various substances, use of deadening material in buildings. Amount of reverberation permissible and desirable in public buildings. Lectures and Laboratory work—Fall Term.

196. HYDROSTATICS.

Laws of fluid pressure and application to machines. Density of solids and fluids, theory of flotation.

Lectures and Laboratory work, Spring term.

197. OPTICS.

Rectilinear propagation of light, illumination, photometry, light standards. Distribution of light by reflectors and diffusers, general and selective absorption, economic values of artificial lights.

Laws of reflection and refraction, theory of optical instruments, stereo-grammetry.

Light considered as wave motion, dispersion spectrum analysis, color phenomena, polarization.

Lectures and Laboratory work, Fall term.

198. HEAT.

Generation and propagation of heat. General and industrial thermometry, calorimetry and pyrometry. Linear and cubical expansion, gas laws. Specific heat of solids, liquids and gases, latent heat of fusion and vaporization. Mechanical equivalent of heat. Carnot cycle.

Lectures and Laboratory work, Fall term.

199. PHOTOGRAPHY.

The camera and its adjustments, lenses, shutters, screens. Plates for various purposes, films, prevention of halation. Lighting, exposure development. Paper of various kinds, printing, enlargement and reduction, blue printing and allied processes. Record photography, photogrammetry and photo-surveying. Photography in color.

Lectures and Laboratory Work.

SURVEYING.

205. SURVEYING.

Required in Departments 1 and 2, Year I; 1 hour per week; both terms.

The lecture course includes—the general principles; surveying with the chain, the compass and chain and the transit and chain; the applications of trigonometry to inaccessible heights and distances; mensuration of surfaces and solids, co-ordinate surveying, division of land, etc.

Text books:—Land Surveying—Gillespie; Theory and Practice of Surveying—Johnson.

206. FIELD WORK.

Required in Departments 1 and 2, Year I; 9 hours per week; first term.

This course comprises—testing chains; practice in chaining; a complete survey of a piece of land with the chain; keeping of field notes; the use of the compass and transit in surveying closed figures and traverse lines and in ranging straight lines; plotting by latitudes and departures and otherwise; computing areas.

207. SURVEYING.

Required in Departments 1 and 2, Year II; 1 hour per week; both terms.

This course of lectures takes up in detail, simple, reverse and compound curves as applied to ralroad surveying. It also includes stadia, plane table and photographic surveying as applied to topographic work and also the main features of mine and hydrographic surveying.

Text books:—Henck, Shunk, Searles, Allen (Field books for Engineers) Theory and practice of surveying—Johnson; Plane surveying —Raymond.

208. FIELD WORK.

Required in Departments 1 and 2, Year II; 9 hours per week; first term.

This course of instruction embraces all adjustments of the transit, accurate determination of angles of closed figure, minor problems in triangulation—ordinary and special problems as applied to railroad work in regard to curves, simple, reverse and compound, profile levelling and plotting of profile.

209. SURVEYING AND LEVELLING.

Required in Departments 1 and 2, Year III; 1 hour per week.

This course of lectures takes up the work of the railroad engineer on construction, including profiles, cross sectioning, computation of volume of earth work, overhaul, transition curves, laying out turnouts, frogs and switches, etc.

Also a discussion of trigonometric and barometric levelling.

Text books:—Field Engineering—Searles; Railroad Curves and Earthwork—Allen.

210. FIELD WORK.

Required in Departments 1 and 2, Year III; about 9 hours per week; fall term.

This includes adjustments of levels and accurate check differential levelling, determination of profile, cross sectioning and computation of earthworth of located line on ground and plotting of same. Also cross sectioning by use of hand level. A complete stadia topographic survey is made and plotted. The spiralling of curves on track already laid down and practical methods of locating and placing sidings and switches.

RAILWAY ENGINEERING.

211. RAILWAY ENGINEERING.

Required in Department 1, Year IV.

The object of this course is to make the student acquainted with the general principles of railroad and street railway engineering and the subject will be studied from the standpoint of—economic theory of location; train resistance; effect of grade, distance and curvature and rise and fall; maintenance of way;yards and terminals; tunnels, and street railway practice.

212. FIELD WORK.

Optional in Year IV.

During the first term an original survey for a railroad some one or two miles in length will be made, the work to be conducted according to the most modern methods of location. Upon the completion of this work, a contour map of the district surveyed will be plotted in the drafting room and a line adjusted to it. This will be staked out in the field, profiles taken and complete estimates of the cost of construction made.

MODERN LANGUAGES.

213. FRENCH.

Required in Department 4, optional in Departments 1, 2, 3 and 7, Years I and II; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

214. GERMAN.

Required in Departments 5 and 6, optional in Departments 1, 2, 3 and 7, Years I and II; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

THESIS.

215. THESIS.

Required of all departments Year IV.

Each student is required to prepare a thesis of between eight thousand and ten thousand words on a subject approved by Council.

VACATION WORK.

216. CONSTRUCTION NOTES. See special circular of information.

OUTLINE OF VACATION WORK.

CONSTRUCTION NOTES.

Required in Years II and III.

The construction notes required consist of neat and complete dimensioned sketches in pencil of any structures, machines or plant which may be of interest. Any object chosen should be represented and dimensioned in such a manner that it could be completely constructed from the notes as the only available information.

From students in Department 2, who have been actually engaged during the summer with Government or other approved geological survey parties, geological field notes will be accepted in lieu of construction notes.

PROFESSIONAL DEGREES.

The attention of graduates is directed to the following regulations respecting professional degrees.

The following degrees have been established: Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem.E.), subject to the following regulations:—

1. A candiate for one of the said degrees shall hold the diploma of the School of Practical Science or of the Faculty of Applied Science and Engineering and the degree of Bachelor of Applied Science except in the case provided for in clause 11 hereunder.

2. He shall have spent at least three years after receiving the degree of Bachelor of Applied Science in the actual practice of the branch of engineering wherein he is a candiate for a degree.

3. Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.

4. Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidate's professional experience for the purpose of clauses 2 and 3.

   The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.

5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree; the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.

   The candidate may be required at the option of the Examiners to undergo an examination in the subject of this thesis.

6. Notice in writing shall be sent to the Secretary not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Examiners.

7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Secretary not later than the first day of April.

8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Examiners.

9. The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.

10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the University.

11. Candidates who graduated from the School of Practical Science before June, 1895, shall not be required to hold the degree of Bachelor of Applied Science.

EXTRACTS FROM SURVEY ACTS.

From the Ontario Act Respecting Land Surveyors and Survey of Lands (R.S.O.)

"26. Any person serving as an apprentice as hereinbefore provided, may, with the permisssion of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subjects required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship and of such course of study shall not exceed the period of four years from the date of the articles of apprenticeship as above mentioned, and not less than three years of the said period of four years shall be passed in the actual service of a practising Ontario Land Surveyor.

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"28. The privilege of a shortened term of apprenticeship shall also be accorded to any graduate of the Royal Military College at Kingston or of the Ontario School of Practical Science in civil engineering or in mining engineering, or of the McGill College, Montreal, in civil engineering or in mining engineering, and such person shall not be required to pass the preliminary examination hereinbefore required for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor duly filed as required by section 32 of this Act, during twelve successive months of actual practice, after which, on complying with all the other requirements, he may undergo the examination prescribed by this Act.

"29. Such person at any time during his apprenticeship may,with the permission of the Board of Examiners, attend the Ontario School of Practical tical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship, and of course of study, shall not exceed the period of two years from the date of the articles of apprenticeship as above mentioned, and not less than twelve months of the said period of two years shall be passed in the actual service of a practising Ontario Land Surveyor."

From Act Respecting Manitoba Land Surveyors.

"28. (1) The privilege of a shortened term of apprenticeship shall be accorded to graduates of the Royal Military College of Canada and to graduates in civil engineering of the University of McGill College of Montreal, the School of Practical Science of Toronto, the School of Mining at Kingston, and graduates of Manitoba University who have taken first or second class honours in the special course in mathematics; and such graduates shall not be required to pass the preliminary examination hereinbefore prescribed for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor, duly filed as required by section 24 of this Act, during twelve successive months of actual practice of which at least six months shall be at actual practice in the field, after which, on complying with the other requirements of this Act, he may undergo the examination for commission to practice prescribed by this Act."

From British Columbia Land Surveyors' Act, 1905.

"52. Whosoever shall have followed, during at least two years, a regular course of studies in all the branches of the sciences required by law in order to be received as a land surveyor; who has attended the lectures of a British university or college where a complete course of theoretical and practical instruction is given in civil engineering, physics, and all other branches of sciences required by law in order to be admitted as a land surveyor, and who has received from such university or college, after a regular examination, his diploma or degree as a civil engineer or land surveyor, on satisfying the Board that he is duly qualified as aforesaid, may, without undergoing the examination for admission to the study of land surveying, be received as a student by any member of the Corporation practising in this Province, and shall be bound to perform only twelve months' actual service in the field as such, or; if he has obtained his degree or diploma as a civil engineer or land surveyor in less than two full years, then only such time of service which, added to the time he has devoted to his course of studies, shall complete the period of three full years; and, at the expiration of the said active service, such person, on complying with the other provisions of this section, shall have the right to present himself and undergo the examination required by law, and, if qualified, to be admitted to practise as a land surveyor for the Province as if he had served his three full years under his indentures with a practising land surveyor; but instead of paying fifty dollars he shall be obliged to pay sixty dollars as fees for his examination and commission as land surveyor."

The above section is to be taken collectively as a whole, no separate clause or sentence can be applied to any particular case.

From the Dominion Lands Act, 1908.

"Every graduate in surveying of the Royal Military College of Canada. and every person who has followed a regular course of study in all the branches of education required by this Act for admission as a Dominion land surveyor, for at least two years, in any college or university where a complete course of theoretical and practical instruction in surveying is organized, and who, after examination has thereupon received from such college or university a diploma or certificate, shall be exempt from serving three years aforesaid, and shall be entitled to examination for a commission after being admitted upon examination as aforesaid as an articled pupil and serving one year under articles with a Dominion land surveyor, including six months' actual practice with him in the field, on producing an affidavit from the said surveyor in said form C, together with his own affidavit in said form D, that he has served for one year as herein provided; but it shall rest with the Board to decide whether the course of instruction in such college or university meets the requirements of this section.

EXTRACT FROM THE ONTARIO ARCHITECTS' ACT.

"Any student who has matriculated in Arts in any University in His Majesty's dominions, or in the Ontario School of Practical Science, shall not be required to pass the preliminary examinations.

"23. Any person who applies for admission to registration as an architect after the coming into force of this Act, shall be not less than twenty-one years of age, shall have served as a student not less than five years with a principal or principals entitled to register under this Act, or with any other principal or principals approved by the Council, and have passed such qualifying examinations as may be required by this Act.

"24. (3) Any person who has graduated from the Ontario School of Practical Science shall be required to serve only three years as a student, one of which three years may be served during the vacation of such school.

"(4) Upon and after the passing of this Act, students shall serve such term as is required to be served by the provisions of this Act, under indenture to be a registered architect, which indenture and any assignment thereof with affidavit of execution thereto attached shall be filed with the Registrar upon payment of such fees as the Council may by regulation direct.

LABORATORY EQUIPMENTS.

THERMODYNAMIC AND MECHANICAL LABORATORY.

The University in 1909 completed the erection of a large, well-equipped building for the accommodation of the steam, gas, mechanical and hydraulic laboratories. A more complete description of the laboratories has been published elsewhere so that the present description is only intended to give the main features.

The part of the building set apart for thermodynamics and other mechanical work is the ground floor of a room 60 ft. x 155 ft. This room is lighted entirely from the roof in a very perfect way. A part of the space 40 ft. wide running the entire length of 155 feet is served by a 3-ton travelling crane and contains the following equipment:

50 h.p. Brown engine with separate jackets on both heads and barrel of cylinder.

Two-stage Rand air compressor having compound steam cylinders, each fitted with Meyer cut-off gear. The low pressure air cylinder has Corliss inlet gear.

30 h.p. high-speed Leonard tandem compound engine with shaft governor.

15 h.p. high speed McEwen engine.

75 h.p. two line compound Willans engine.

15 h.p. DeLaval turbine with special nozzles for condensing and non-condensing tests.

Two 15 h.p. Leonard engines with different types of valves, which are used for valve setting.

There are also two surface condensers with air pumps so arranged that any engine in the laboratory may be made to exhaust into the atmosphere through an open heater or into one of the condensers, the change from one arrangement to the other being accomplished in a few minutes without the aid of valves.

The laboratory further contains

A 3-ton York refrigerating machine with tanks.

An Amsler transmission dynamometer.

Apparatus for testing injectors and steam pumps.

Numerous other pieces of apparatus and instruments.

The work on internal combustion engines and producers is performed on the following:—

18 h.p. Canada suction gas producer.

14 h.p. National gas engine arranged for various compressions and points of ignition.

10 h.p. Fielding and Platt engine for city gas or coal oil, having various adjustments.

8 h.p. Otto gas engine.

6 h. p.marine gasoline engine.

Ericsson air engine.

Various accessories to above machines.

Steam for the laboratory is supplied by two 50 h.p. and one 100 h.p.

Babcock and Wilcox boilers, the latter having an internal superheater. These boilers are located in a separate boiler room. They are used for experimental work only and are fitted up for testing. The gases pass up through two independent chimneys and these have been arranged so that the draft and other conditions in the chimney at any point of its height may be examined.

In smaller work rooms off the main laboratory are placed belt and oil testing machines, apparatus for testing the efficiency of gears and machines, and for experiments in the balancing of machinery.

HYDRAULIC LABORATORY.

The hydraulic laboratory occupies two floors each 40 feet x 112 feet, which are well lighted by large windows on the side and end.

The water for the experimental work is pumped through the various pieces of apparatus from a well by means of two turbine pumping units both of which are driven by a Belliss and Morcom compound engine of 125 h.p. running at a speed of 525 revs. per minute. Both engine and pumps have been installed with a view to using them in experimental work as well as for supply of water for other apparatus used in the laboratory.

The pumping units are capable of delivering one cubic foot of water per second against heads of 250 feet and 300 feet respectively. These units are designed and connected up so that they may be run in series giving the above discharge at 550 feet head or they may be run in parallel giving double the discharge at a lower head. Each pumping unit consists of two two-stage pumps mounted on a common base and driven by a single pulley and the construction and piping are such that each two-stage pump may be driven separately or that all may be driven at once, discharging separately one cubic foot per second at about 125 feet head through each of four independent pipes, or else the pumps may be run in series or in parallel. The scheme is thus well adapted to laboratory work and under the heads used on reaction turbines about six cubic feet per second may be obtained.

The laboratory further contains a large vertical steel tank 5½ feet diameter by 34 feet high with arrangements for the attachment of nozzles and other mouth pieces, etc. Connections are also arranged for reaction turbines, the tank acting as a reservoir.

The discharge from the turbines or nozzles is measured in a weir tank nearly 6 feet wide and 21 feet long containing a contracted weir 4½ feet wide. This weir may be calibrated by two weighing tanks each having a capacity of about 240 cubic feet.

There are three reaction turbines and two impulse wheels all ready for experiment, the power being measured by brakes and the water by weir or orifices. Amongst the reaction turbines may be mentioned the one designed and built by Escher Wyss and Co., specially for the laboratory.

Smaller orifice and weir tanks each about 3 x3 x12 feet with necessary measuring tanks are arranged for instruction in coefficients of various kinds and practice with weirs and orifices.

A Venturi meter and other meters, also an hydraulic ram and similar devices are available for testing, and good facilities have been arranged for investigating friction and other properties of pipes and fire hose.

For special investigations on turbine and centrifugal pumps, other pumps in addition to those already described have been arranged.

The basement of the laboratory contains an open trough 5 feet wide about 110 feet long with a large weir at one end. It is intended to use this trough for experiments on the flow in open channels, for measurements of large discharges by means of the weir, and for experiments with current meters and Pitot tubes.

Numerous pieces of smaller apparatus together with all instruments required have also been provided, and the laboratory equipment is believed to be very complete.

DONATIONS TO THE THERMODYNAMIC AND HYDRAULIC LABORATORIES.

The following donations to the equipment of the laboratories have been made through the kindness of those mentioned.

50 h.p. Wheeler Surface Condenser, presented by Mr. F. M. Wheeler, New York.

Blake Feed Pump, presented by the manufacturers.

6 inch New American Turbine, presented by Wm. Kennedy & Sons, Owen Sound, Ont.

Two Crown Water Meters, presented by the National Meter Co., New York, through Mr. M. Warnock, Toronto.

Rock Drill presented by Sullivan Machinery Co., New York, through Mr. A. E. Blackwood, '95.

Marine Gasoline Engine, presented by Canadian Fairbanks Co., Montreal.

Two engines with different types of valve, presented by Messrs. E. Leonard & Sons, London, Ont.

Bundy trap from American Radiator Co., through Messrs. Russell & Gifford.

Dunham steam trap from C. A. Dunham Co.

Sectional models of valves from American Radiator Co.

Sectional model Mason Reducing Valve by Russell & Gifford.

In addition to the above, other firms have materially assisted by offering apparatus at or below cost price, among whom may be specially mentioned, The Canadian Rand Drill Co., Sherbrooke, Quebec.

PHYSICAL LABORATORIES.

The optical laboratory is equipped with Weinhold optical benches and accessories for determining the constants of mirrors and lenses and for demonstrating the construction and use of telescopes, field glasses, microscopes, etc. There is also a full equipment of optical instruments including telescopes, microscopes, field glasses, comparators, spectrometers, level tester, photometers of various types, focometer, dynameter, cathetometer, polariscope, projecting lanterns, etc.

The photographic laboratory is supplied with several cameras for viewing, copying, enlargement and reduction, a spectroscopic camera and an electric blue printing machine and the necessary dark rooms.

The hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balances, Jolly balance, Mohr's balance, hydrostatic press, vacuum pumps, gauges, etc.

The heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat, expansion apparatus, air thermometer, apparatus for verification of Boyle's law and pressure and boiling point curve and for determination of the absolute expansion of mercury. Callendar's apparatus for determination of the mechanical equivalent of heat.

The acoustical laboratory is provided with sonometer, siren, forks ordinary and electric, Lissajous' and Melde's apparatus, organ pipes of various forms, manometric flame apparatus and a special equipment for work in architectural acoustics consisting of torsion chronograph, electropneumatic wind chest and standardized organ pipes and other accessories.

STRENGTH OF MATERIALS LABORATORY.

This laboratory is intended for the scientific and commercial testing of the materials of construction such as iron, steel, timber, concrete and masonry.

It is supplied with the following:

An Emery 50-ton hydraulic machine, built by Wm. Sellers & Co., of Philadelphia, for making tests in tension and compression.

A 100-ton screw power machine, built by Riehle Bros., Philadelphia. It is designed for making tests in tension, compression, shearing and cross-breaking and will take in posts 12 feet long and beams up to 18 feet in length.

A Riehle 10-ton screw power universal testing machine.

A Riehle 50-ton screw power universal testing machine.

A 15-ton single lever-machine, built by J. Buckton & Co., Leeds, England.

A torsion machine, built by Tinius Olsen & Co., Philadelphia, for testing the strength and elasticity of shafting. This machine will twist shafts up to 16 feet in length and 2 inches in diameter.

A hand power torsion machine of simple mechanical construction, specially designed for the testing of short shafts of a maximum diameter of one inch.

A Riehle transverse testing machine of 5,000 pounds capacity, adapted to specimens up to 48 inches in length.

A Riehle compressometer, with spherical seat attachment for the adjustment of specimens having slightly non-parallel faces. This compressometer will receive specimens up to 10 inches in length.

An Olsen compression micrometer of standard type.

A 20,000 pound Olsen, hand power ,wire testing machine, especially fitted for testing wooden columns with both fixed and pivoted ends.

A Riehle abrasion cylinder, built to the standard required by the National Brick Makers' Association, adapted in 1901.

A large number of extensometers of the usual degree of precision. These include the Bauschinger, Martens, Unwin, Marshall, Riehle, Johnson, Henning (recording) and other types. In addition there are the usual scales, micrometers, telescopes and reflectors, voltmeters for the determination of metallic contract, and such other appliances as are necessary in the making of precise measurements.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labour. It is also supplied with the necessary appliances for making ordinary repairs and for making apparatus for special experiment and original investigation.

CEMENT TESTING LABORATORY.

This laboratory is fitted with all the ordinary moulds, sieves, balances, burettes, steaming and drying tanks, tables, and other appliances necessary in making the usual physical tests of a Portland cement. In addition there are the following:—

A Riehle 2,000 lb. machine fitted for either tension or compression.

A 2,000 lb. Riehle shot machine for tension.

A 2,000 lb. Fairbank's shot machine for tension.

A 1,000 lb. Olsen automatic shot machine fitted for tests in either tension or cross breaking.

An Olsen soapstone moist closet of modern design.

METROLOGICAL LABORATORY.

The department of surveying and geodesy is provided with all the ordinary field instruments, such as transits, levels, compasses, micrometers, sextants, planimeters, plane tables, tapes, chains, etc., with which is carried on the instruction in practical field operations as detailed elsewhere. A small laboratory is also established in the basement of the observatory described below, containing the necessary instruments for the refined measurements of geodetic surveying; as, a standard yard and metre, a Rogers 10 foot comparator, a Kater's pendulum with vacuum chamber a level trier, micrometer, microscopes, etc.

The geodetic observatory in connection with this department is used for the instruction of students of the fourth year in taking observations for time, latitude, longitude, and azimuth by the precise methods used in connection with a geodetic survey. It contains a 10 inch theodolite and zenith telescope by Troughton & Simms; an astronomical transit instrument and an 8 inch theodolite by Cooke; an electro-chronograph; a Howard astronomical clock; a Dent sidereal break-circuit chronometer; arithmometers, etc.

ELECTRICAL LABORATORIES.

Galvanometer laboratory:—This laboratory is equipped with numerous galvanometers, resistance boxes, bridges, potentiometers, standard resistances, standard cells, etc., and much other usual and special apparatus for varied electrical experiments of the more delicate variety.

This laboratory also contains apparatus for studying the various types of arc and incandescent lamps.

Another room is fitted more especially for calibration of electrical instruments for alternating and direct currents. About one hundred and twenty portable measuring instruments are available for students' use, also standard instruments, including Weston laboratory standards, Kelvin balances, and a Wolff potentiometer, with which the portable instruments may be compared.

Machine Laboratory:—This laboratory, occupying two large rooms, contains twenty-five dynamos and motors varying in capacity from two to twenty kilowatts, adapted for experiments illustrating the properties of compound shunt and series dynamos and motors, arc machines, etc. Switch-boards, numerous rheostats, lamp racks, starting boxes, circuit breakers, flexible cables, brakes, torsion dynamometers, tachometers, etc., are available for use with the machines.

This laboratory also contains two 15 kw., 25 cycle and two special 15 kw., 60 cycle General Electric polyphase revolving field alternaotrs direct driven by motors, two rotary converters of 10 kw. and 5 kw. capacity, a 7½ kw. General Electric polyphase induction motor with slip ring rotor, Westinghouse three phase squirrel cage induction motors, Wagner single phase motor, Westinghouse single phase series motor, Westinghouse alternator, and several three phase and single phase induction motors; also transformers, reactive coils, and other details, as in the direct current section of the laboratory described above, for experiments on the properties of alternating currents and alternating current apparatus in general. A constant -current transformer with its load of six series arc lamps, a three-element oscillograph, for studying wave forms, a high potential transformer and a mercury arc rectifier may also be mentioned. The students are suppled with Weston, Westinghouse and Thomson portable instruments for measuring purposes.

Magnetic Laboratory:—A room is fitted with appliances for the study of saturation and hysteretic properties of samples of iron and steel. as well as a transformer for determining dielectric strength. The room also serves for exercise in winding models of direct current armatures, alternators, etc.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the Chemistry and Mining building, on the first and second floors. The rooms are large and well lighted, and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accomodation for 112 students, each working space being supplied with water, gas and fume cupboard. The laboratory for quantitative analysis will accommodate 48 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 36 is provided for the students engaged in the study of technical chemistry; it is equipped with appliances for the preparation and testing of chemical products. Each of these laboratories has its own balance room adjoining, furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis, calorimetry, and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

ELECTROCHEMICAL LABORATORIES.

The Electrochemical laboratories which are situated in the Chemistry and Mining building are provided with special facilities for electrolytic work, including a large storage battery and electroplating dynamo with tanks as well as a complete set of apparatus and electrical measuring instruments. The experimental work on electric furnaces is performed in two rooms specially equipped for this purpose with rheostats and switchboard connections to a 120 kw. D.C. generator, which supplies the current required.

GEOLOGICAL AND MINERALOGICAL LABORATORIES.

In the Chemistry and Mining building on College Street the University possesses a modern laboratory for Geology and Mineralogy.

Brief courses are given in laboratory work, especially in personal examination of type sets of rocks, fossils, minerals and crystal models. These laboratory exercises serve to illustrate the introductory didactic instruction.

For the encouragement of pure crystallography the laboratories are supplied with goniometers of the various types, crystal models, appliances for the cutting of oriental crystal sections and for the physical examination of the same. Practical petrography is carried on in rooms provided with type sets of rocks, both macroscopic and microscopic. Advanced students are taught to make thin sections of rocks and fossils and to study them microscopically. Students in palæontology are given instruction in the preparation of material for study and are afforded an opportunity of examining type series of specimens.

The laboratory for the preparation of thin sections of rocks, minerals and fossils is provided with electric diamond saws and grinding appliances for the various types of work incidental to the preparation of thin sections and museum material.

A room is also provided for advanced work in cartography and geological surveying.

The departments possess 28 petrological microscopes and 5 of other types so that it is now possible to provide advanced students with instruments and sets of thin sections for their own especial use. The blowpipe laboratory contains 156 lockers, especially designed for apparatus for students.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building, one has a floor space of 17 feet x 47 feet, and the other 28 feet x 37 feet. Adjoining each is a room 15 feet x 11 feet, with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances set on a concrete pier. Each of the laboratories contains a number of melting holes (13 in all) for crucible fusions, various gas furnaces both for crucibles and muffles, and a large brick muffle furnace.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation toom (19 feet x 13 feet) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

The metallurgical room is 40 feet x 21 feet and is equipped at present with a reverberatory furnace for roasting sulphide and arsenical ores, a water Jacketted blast, furnance for copper smelting, fume cupboard, lockers, tables, etc., and is intended for hydro-metallurgical work.

MILLING AND CONCENTRATING PLANT.

A detached building 72 feet x 70 feet in area, contains the milling and concentrating equipment. It is heated, lighted and supplied with power from the main building, and is divided into two parts. The greater part, with 72 feet x 53 feet floor space, and 22 feet high, contains the milling and concentrating equipment. The machinery for the former operations consists of a five-stamp battery erected on concrete foundation. Challenge ore feeder, amalgamating plates, Wilfley table concentration, a clean up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore. This is driven by a 15 horse power motor.

The concentrating part consists of a set of five revolving trommels for wet screening, four three-compartment jigs, a trough classifer delivering three products, and two revolving buddles,Wilfley Slimer, Deister Slimer, Richard's Pulsating Classifier, Richard's Pulsating Jig, a Behrend Dry Concentrator, a dry sizer, besides experimental apparatus of various kinds for experimenting on the falling rates of ore particles, the settling of slimes, surface tension action in grease and flotation methods, etc. The waste products run to the same settling tanks as the tailings from the stamp battery. The ore is handled by a travelling crawl. All the machinery in this part is driven by a 10 horse power motor.

The plant throughout is intended mainly for experimental purposes and is made of such a size that numerous experiments can be carried out on small quantities of ore. Tests can also be made on lots of one or two tons.

The other part of the milling building with 72 feet x 17 feet floor space and 15 feet high, is divided into four separate rooms. The largest of the four rooms has an area of 476 square feet and is devoted to the crushing and pulverizing of the ores preparatory to their treatment in the milling and concentrating room. It is isolated in order to confine the dusty operations as far as possible to this one room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16 inches by 12 inches' platform scales for weighing ore, a jib crane, pulleys, buckets, etc., for handling the rock. An adjoining room contains a 30 h.p. motor for driving the machinery of the crushing department, and storage bins for ore, work bench, etc. Another room with 17 feet x 15 feet floor space, is furnished with a magnetic separator of the Rowan-Wetherill make, driven by its own motor.

One room of the same size as the above remains available for future additions.

MUSEUM.

The Geological and Mineralogical Museum of the University is open to students of the Faculty of Appled Science, and is also accessible to the general public from 9 to 5 p.m. throughout the year.

The Museum is situated in the south-east corner of the ground floor of the Chemistry and Mining building, and may be entered from the door at that corner of the building.

The southern half of the room is occupied by the cases of the palæontological collection in which are arranged a large series of fossils. These specimens are placed so as to display together the great groups of animals, while the minor divisions are based on stratigraphical grounds. Particularly worthy of note are the fine series of Crinoids and Cystids and the type specimens of Eastern Canada Cambrian fossils. A large part of this collection is due to the generosity of Sir Edmund Walker and Sir Wm. Mackenzie. On the walls of the museum are being placed some excellent specimens of large extinct vertebrates.

To the north of the fossil collection is the Ferrier Cabinet of Minerals containing good examples of nearly all the minerals known to science, as well as a special case with specimens of the various minerals from the Cobalt Mining District.

The northern part of the room is occupied by twenty cases exhibiting all the important rocks both igneous and sedimentary which go to make up the crust of the earth.

Around the walls are placed cases containing the chief economic mineral products arranged in accordance with their practical application to human activities. This collection is particularly rich in specimens from Ontario localities and includes most of the material formerly exhibited in the Engineering building.

LIBRARY.

Rooms have been set apart in the Engineering and the Chemistry and Mining buildings for the housing of such periodicals and other literature of the University Library as is of special interest to the students of this faculty.

SOCIETIES.

THE ENGINEERING SOCIETY OF THE UNIVERSITY OF TORONTO.

Officers for 1911-1912.

President	W. B. McPherson.
1st Vice-President	E M. Watts.
Vice-Pres. Civil & Archl. Secs	J. E. Ritchie.
" *Mechanical & Elec. Secs*	G. J. Mickler.
" *Chemistry & Mining Secs*	K. S. MacLachlan.
Recording Secretary	H. A. Heaton.
Corresponding Secretary	A. A. McQueen.
Treasurer	C. F. Elliott.
Permanent Secretary	H. Irwin.
Curator	R. G. Matthews.
Fourth Year Representative	W. J. T. Wright.
Third Year Representative	R. F. B. Wood.
Second Year Representative	F. C. Mechin.
First Year Representative	To be elected.
Senior Varsity Representative	C. S. Fowlds.

The Society meets every second Wednesday during the academic year. Papers are read, and discussions are held on engineering subjects. The Society publishes a pamphlet monthly during the academic year, containing the best papers read at the meetings. A supply department is conducted by the Society, on a co-operative plan through which instruments, drafting supplies, stationery, etc., may be purchased at a low cost.

UNIVERSITY OF TORONTO ELECTRICAL CLUB, 1910-1911.

President	W. P. Dobson.
Vice-President	J. H. Billings.
Secretary-Treasurer	T. H. Crosby.
Councillors	H. J. McTavish. R. A. Story. R. Taylor.

The Society meets every second Thursday evening during the academic year for the discussion of papers relating to mechanical and electrical engineering problems too technical for consideration in the Engineering Society. The membership is limited to members of the senior and final years.

ATHLETIC ASSOCIATION OF THE FACULTY OF APPLIED SCIENCE.

EXECUTIVE COMMITTEE, 1910-1911.

Honorary President	Dean Galbraith.
President	C. E. Richardson.
Vice-President	R. S. Bell.
Secretary-Treasurer	To be elected.
Fourth Year Representative	N. J. Harvie.
Third Year Representative	W. H. Wylie.
Second Year Representative	F. J. Mulqueen.
First Year Representative	To be elected.

The Athletic Association has full control over all athletic clubs using the name of the Faculty of Applied Science. The Executive Committee has power to suspend any one from the privileges of membership in the Association for any breach of its regulations, and controls the finances of all athletic clubs in the aforesaid Faculty. The annual membership fee of this Association is fifty cents.

No other moneys are collected for the support of athletics in the Faculty of Applied Science without the sanction of the Executive Committee.

RUGBY FOOTBALL.

The Mulock Cup, which was presented by Sir Wm. Mulock, M.A., LL.D., to the University of Toronto Rugby Football Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

RUGBY FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers 1910-1911.

Honorary President	T. Loudon.
President	J. McNiven.
Vice-President	F. J. Mulqueen.
Secretary-Treasurer	F. S. Milligan.
Manager senior team	A. E. Alison.
Captain senior team	R. L. Dobbin.
Manager junior team	G. B. Taylor.
Captain junior team	H. Webster.

ASSOCIATION FOOTBALL.

In order to encourage Association Football on the College campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

(Winners of Faculty Cup.)

Officers for 1910-11.

Honorary President	Prof. C. H. C. Wright.
President	W. C. Blackwood.
Vice-President	R. S. Bell.
Manager of seniors	C. P. Sills.
Captain of seniors	J. H. Billings.
Manager of juniors	W. H. Wylie.
Captain of juniors	

HOCKEY.

The trophy which is competed for annually among the Colleges in hockey is known as the Jennings Cup, and is the gift of the late W. T. Jennings, Mem., Inst. C. E.

HOCKEY CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers for 1909-10.

Honorary President	Prof. W. H. Ellis.
President	C. E. Richardson.
Vice-President	W. C. Foulds.
Manager senior team	H. D. Fyfe.
Manager junior team	F. McEachren.

TRACK CLUB.

Officers for 1910-11.

Honorary President	P. Gillespie.
President	L. A. Wright.
Secretary-Treasurer	J. M. Gibson.
Fourth Year Representative	R. L. Dobbin.
Third Year Representative	C. S. Cameron.
Second Year Representative	E. R. Bonter.
First Year Representative	M. Levy.

OFFICERS OF THE 2nd FIELD COMPANY CANADIAN ENGINEERS.

Officer Commanding	Major W. R. Lang.
Captain	S. P. Biggs.
Acting Quartermaster	T. C. Irving, Jr.
Lieut. (Acting Adj.)	H. N. Gzowski.
Lieutenant.	C. S. L. Hertzberg.
Lieutenant.	H F H. Hertzberg.
Supernumerary.	D. C Raymond.
Medical Officer	J W. Barton, M.D.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION.

Directorate.

Honorary President	R. A. Falconer, D. Litt. LL.D
President	Prof. A. T. DeLury
Vice-President	T. R. Hanley.
Secretary-Treasurer	Jas. W. Barton, M.D.

Directors.

Prof. C. H. C Wright.
Dr. W. B. Hendry.
Jas. S. Bell.
W. D Foulds.
F. S. Park.
L. A. Wright

The Athletic Association is now the paramount body in University athletics and has entire jurisdiction over the athletic clubs using the University name, and over their finances, members and policy, subject to the University authorities. Henceforth no financial agreement can be entered into by any such club without the sanction of the Directorate. No expenditure of any kind in connection with any such club can be made without the written order of the Secretary-Treasurer of the Directorate.

THE INDUSTRIAL CHEMICAL CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers for 1910-11.

Honorary President	Dr. Ellis.
Honorary Vice-President	Professor Bain.
President	R. J. Arens.
Vice-President	E. R. Williams.
Secretary	Geo. Clarkson.
Treasurer	V. van der Linde.
Fourth Year Representative	J. H. Harris.
Third Year Representative	A. E. Stewart.

The Industrial Chemical Club was organized in 1909 and consists of graduates and undergraduates of Departments 5 and 6. Its object is to promote the study of industrial chemistry and chemical engineering. Illustrated lectures. preceded by an informal dinner and short musical program, are held fortnightly, and on the following day an excursion is made to one or other of the industrial chemical concerns located in the city or vicinity.

BASKETBALL CLUB.

Season 1910-11.

President	C. E. Richardson.
Vice-President	W. C. Foulds.
Manager of Seniors	L. A. Wright.
Captain of Seniors	H. Gall.
Manager of Juniors	M. Levy.
Captain of Juniors	L. Simpson

FACULTY OF APPLIED SCIENCE.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Y.M.C.A. of the Faculty of Applied Science was organized January 27th, 1905, and forms an integral part of the University of Toronto Y.M.C.A., which is a federation of the Association of the various Colleges and Faculties of the University. The object of the Association is to develop a true Christian manhood and to help the students in whatever way possible.

Honorary President	H. W. Price.
President	J. H. Billings.
Vice-President	M. Kirkwood.
Treasurer	R. B. Chandler.
Recording-Secretary	D. J. Thompson.

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the University, at a cost of from four dollars and a half a week upwards for comfortable lodging with board; or rooms may be rented at a cost from one dollar and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

UNIVERSITY RESIDENCES,

The attention of students is directed to the accommodation which has been provided in the new residences situated within the University grounds. These residences will accommodate in all about one hundred and fifty men. Every reasonable comfort is supplied.

The room rental varies from two dollars to three and a half dollars per week, and suitable board may be conveniently obtained at the University Dining Hall at three dollars per week.

The residences and dining hall are under University management.

Applications for rooms should be made in writing to the Registrar of the University at as early a date as possible.

GYMNASIUM AND ATHLETIC GROUNDS.

"The University gymnasium was completed and equipped in 1893. It is fully provided with the best and most modern appliances for physical culture, and contains a running track, shower baths and swimming bath, besides the necessary dressing rooms and other conveniences. A competent instructor in gymnastics is in constant attendance to superintend and direct the exercises of students. In addition to the lawn in front of the Main University Building and a campus in the rear, a large plot of ground on Devonshire Place has been set apart as an athletic field. By this addition the facilities for football, cricket, tennis and other out door athletic sports are doubled, as compared with previous accommodation; and by these grounds, in conjunction with the gymnasium, ample opportunity is afforded to all students for healthful exercise and physical development. To assist in meeting the expenses of the gymnasium, a nominal annual fee is imposed on those who avail themselves of its advantages. The supervision of all athletic matters has been entrusted by the Council to an Athletic Board, consisting of six members appointed from the Faculty and officers of the Atheltic Association. All applicants of clubs for the use of grounds must be made annually to this Board. All such applications must be accompanied by a list of officers. In the case of new clubs the list of officers must be accompanied by particulars as to the organization and objects of the club making application."

STUDENTS' UNION BUILDING.

"In 1894 additions were made to the front of the building in which the gymnasium is situated, consisting of a large hall for public meetings, a reading room and committee rooms. This additional accommodation is available for the work of the various students' societies, and for academic purposes. Applications for the use of rooms, accompanied by a list of officers and a copy of the constitution of the society making application, must be made, through the President, to the joint committee of the Councils on Gymnasium and Students' Union Building, at the beginning of the season, or from time to time as occasion requires. Arrangements have also been made by which recognized societies may obtain the use of committee rooms on application to the janitor of the Students' Union Building."

STUDENTS IN ATTENDANCE.

SESSION 1910-1911.

First Year.

MATRICULATED STUDENTS.

6 Acton, J. C. .... Toronto.
1 Adsett, F. C. .... Guelph.
1 Alton, J. L. .... Lucknow.
2 Andrews, F. C. .... Hamilton.
1 Arksey, G.A. .... Toronto.
7 Armer, C. E., ... Toronto.
4 Ashforth, A. .... Toronto.
1 Bedard, H. J. .... Courtright.
1 Bedard, E. L. .... Courtright.
1 Belcher, J. T. .... Toronto.
7 Bemrose, B. W. .... Bradford.
1 Beswick, R. C. .... Uxbridge.
1 Binns, P. V. ... Port Antonio, B.W.I.
7 Birrell, A. L. .... Toronto.
4 Bower, J. H. W. .... Toronto.
1 Bowman, H. H. ...... Southampton.
3 Brayley, J. R. K. .... Toronto.
7 Brooks, W. J. .... Toronto.
7 Brown, W. D. .... Chatsworth.
3 Brown, H. H. .... Port Hope.
1 Butler, C., Virginia, Minn., U.S.A.
2 Cameron, E. P. .... Thorold.
1 Campbell, J. J. ..... Winnipeg, Man.
1 Campbell, D. H. .... Kintyre.
3 Campbell, H. M. .. St. Catharines.
6 Candee, C. N. .... Toronto.
1 Cannon, F. J. .... Toronto.
1 Carroll, H. M. .... Richmond Hill.
2 Carter, J. M. .... Toronto.
7 Cavers, J. P. .... Toronto.
5 Clark, J. E. .... Toronto.
1 Clarke, F. W. .... Toronto.
1 Code, W. W. ...... Dauphin, Man.
2 Coste, D. .... Toronto.
3 Courtice, E. D. W. .... Clinton.
1 Crashley, J. W. .... Toronto.
7 Crawford, A. W. .... Sarnia.
1 Cuthbertson, W. .... Perth.
1 Dafoe, E. R. .... Napanee.
1 Dalton, G. F. J. .... Ottawa.
1 Davidson, R. D. .... Alliston.
1 Dean, W. A. .... Toronto.
4 Denison, M. .... Toronto
1 Douglas, F. W. .... Toronto.
7 Edwards, H. .... Toronto.
1 Elliott, J. A. .... Nelson, B.C.
7 Elliott, H. F. .... Norwood.
1 Eyres, H. E. .... Calgary, Alta.
1 Falconer, H. S. .... Shelbourne.
1 Falls, O. M. .... Wiarton.
1 Fansher, P. L. .... Florence.
1 Ferris, C. B. .... Eglinton.
5 Field, B. L. .... Mitchell.
7 Flannery, D. T. ...... North Bay.
4 Fleming, G. O. .... Toronto.
1 Ford, J. W. H. .... London.
1 Foreman, J. L. ...... Collingwood.
7 Franklin, H. J. .... Toronto.
5 Frost, J. G. .... Tweed.
1 Fulcher, E. J. .. Sault Ste. Marie.
1 Fuller, C. H. R. .... Toronto.
1 Gaboury, L. F. .... Toronto.
1 Gardner, D. B. .... Toronto.
1 Geale, C. N. .... Peterboro.
2 Gill, J. R. .... Sudbury.
7 Gill, E. I. ..... Victoria Harbour.
3 Goudie, J. A. .... Iroquois.
7 Gouinlock, R. W. .... Toronto.
7 Gray, G. D. .... Waterford.
1 Greenwood, F. C. .. St. Catharines.
1 Greer, G. H. .... Lashburn, Sask.
7 Griffiths, G. E. .... Thorold.
4 Gurofsky, M. .... Toronto.
2 Halford, D. S. .... Toronto.
3 Hall, W. H. .... Peterboro.
3 Hally, G. H. .... Toronto.
1 Hanna, J. J. .... Calgary, Alta.
1 Harris, R. W. .... Toronto.
3 Harold, L. H. .... London.
1 Haws, H. .... Toronto.
1 Hayman, L. T. .... London.
4 Heaton, H. A. .... Toronto.
1 Hewson, R. R. .... Toronto.
1 Hogarth, B. B. .... Brandon, Man.
4 Holden, A. J. .... Woodburn.
6 Hooey, H. R. .... Toronto.
7 Hopkins, H. R. .... Burlington.
4 Hugli, E. E. H. .... Toronto.

Hustwitt, S. A. .... Toronto.
Hutcheson, F. W. ..... Huntsville.
Hutchings, W. .... Toronto.
James, R. C .... Guelph.
Jannati, A. S ...... Bombay, India.
Jefferson, K. A ..... Arcola, Sask.
Johnson, R. P. .... Toronto.
Johnson, H. H. G .... Toronto.
Jones, R. A. D .... Toronto.
Kammin, J. I .... Rochester, N. Y.
Kerby, H. S .... Calgary, Alta.
Kerr, J. A .... Peterboro.
Kewin, G. E. .... Toronto.
Keys, C. R .... Newark, N. J.
Knight, J. A .... Bala.
Kribs, R. L .... Hespeler.
Lang, S. A .... Toronto.
Latimer, C. W .... Penticton, B. C.
Leach, H. O .... Toronto.
Lee, L. A .... Toronto.
Levy, M. .... Toronto.
Lindsay, R. E .... Bolton..
Longworthy, W. E .. Regina, Sask.
Lye, O. G .... Toronto.
Macaulay, G. B .... Murray.
Macauley, A. H .. Vancouver, B. C.
Macdonald, C. A ..... Ridgetown.
Macdonald, C. E .... Toronto.
Macdonald, W. A .... Cobalt.
Macdonald, G. G .... Toronto.
Mackellar, S. R .... Toronto.
MacKendrick, B .... Galt.
MacKenzie, H. J .... Woodstock..
MacKenzie, A. M .... Guelph.
Macpherson, H. E .... St. Thomas.
Macpherson, H. N Regina, Sask.
McCaul, J.G .... Toronto.
McCaw, D .... Welland.
McDonald, R. C .... Ripley.
McDowell, E. H ..... Griffin, Sask.
McIntyre, J. S .... Peterboro.
McLaren, D. L .... Drummond.
McTavish, W. I .... Toronto.
Malcolm, A .... Banks.
Mansell, G. R .... Toronto.
Marshall, J A, Ryckman's Corners.
Marshall, J. A. P .... London.
Mason, F. H .... Uxbridge.
Matthews, R. G. .... Brantford.
Mattocks, F. C .... Toronto.
Maxwell, H. W .... St. Marys.
Meader, J. .... Toronto.
Mechin, F. C .... Brougham.
Millar, W. G. .... Brantford.
Miller, A. S. .... Brighton.
Milligan, W.E.. .... Toronto
Mills, P. .... Toronto
Mitchell, J. S .... Lucknow
Montague, J. R., Niagara Falls, Can.
Morrison, D .... Bowmanville
Moshier, E. W .... Toronto
Muir, M .... Toronto
Mullins, G. J .... Toronto
Muntz, E. P. .... Toronto
Murphy, D. E.,
New Westminster, B.C.
Neelon, J. H. .... Toronto
Ney, C. H .... Aurora
Nicholson, C. L .... Toronto
Nicklin, H .... Millbank
Noecker, C .... Waterloo
Ogilvie, T. H .... Toronto
Owens, J. A .... Vernon, B.C.
O'Connor, E. B.. .... Toronto
Parker, A. H .... Ivy
Patterson, R. G .... St. Marys
Peart, J. D .... Nelson
Peck, W. R .... Barrie
Perry, C. V. .... Toronto
Phillips, W. E .... Toronto
Philp, G. O .... Port Hope
Powell, W. D .... Hatchley
Purdy, A. K .... Toronto
Pym, A. F .... Essex
Rance, C. C .... Clinton
Raney, P. H .... Toronto
Ratz, I. L .... Elmira
Rice, R. H .... Toronto
Richardson, S. M .... Ingersoll
Robertson, J. M .... Toronto
Robertson, A. S. .... Toronto
Ross, J .... Toronto
Rowe, H. M .... Norwich
Russell, W. E. .... Waubaushene
Ruston, W. T. S .... Nortonville
Rutter, G. W .... Birch Cliff
Ryan. W. M .... Owen Sound
Saunders, W. L .... Goderich
Savage, E. W .... Navan
Scarborough, C. M. M.
Strathcona, Alta.
Scott. E. H .... Toronto
Scott, A. G .... Smith's Falls
Scott, J. G .... Toronto
Servos, F. M.
Niagara-on-the-Lake
Shaver, A. H .... Tilbury
Shepley, J. G .... Essex
Sheppard, H. L .... Coldwater
Sheppard, N. E. D. .... Ottawa
Shupe, S .... Attercliffe Station
Sime, A. W. .... Toronto
Simpson, B. N .... Toronto
Sinclair, C. E .... Meaford

1 Skaith, J. B. . . . . Toronto
4 Skinner, W. C. . . . . Toronto
2 Smyth, G. M. . . . . Merriton
1 Somers, N. L. . . . . Rockford
7 Standing, R. O. . . . . . Boston Mills
1 Steers, F. P. . . . . Ottawa
1 Steven, R. A. . . . . Toronto
1 Stevens, P. L. . . . . Toronto
1 Stewart, E. . . . . Collingwood
7 Stoneman, E. C. R. . . . . Toronto
7 Storey, G. C. . . . . Wawanesa, Man.
1 Strome, I. R. . . . . . Brandon, Man.
1 Sutherland, W. F. . . . . Galt
3 Tapping, F. . . . . . Revelstoke, B.C.
2 Taylor, G. B. . . . . Toronto
3 Taylor, H. C. . . . . Victoria, B.C.
2 Taylor, J. S. . . . Whitehorse, Y. T.
3 Tennent, E. H. . . . . London
2 Thompson, E. W. . . . . Toronto
1 Tillson, L. B. . . . . Bracebridge
2 Tilston, J. A. . . . . Toronto
1 Treloar, G. E. . . . . Toronto
7 Trimble, D. . . . . Queenston
7 Tull, W. S. . . . . . . Edmonton, Alta.
6 Twidale, E. A,
Niagara Falls Centre
1 Tyrwhitt, R. . . . . Toronto
5 Van der Linde, W. . . . . Toronto
1 Van Dyke, F. T. . . . . Grimsby
3 Verity, W. B. . . . . Toronto
3 Verity, M. F. . . . . Brantford
1 Waddell, H. O. . . . . Port Hope
1 Wagner, H. W. . . . . Toronto
1 Wallace, H. D. M. . . . Blind River
5 Walton, B. . . . . Peterboro
7 Watts, W. J. . . . . Toronto
7 Whatmough, N. D. . . . . . . Toronto
1 Whitely, P. L. . . . . Londesboro
6 Wigle, A. E. . . . . Kingsville
4 Wilson, A. C. . . . . Toronto
1 Wood, E. O. . . . . Victoria, B.C.
2 Young, R. W. . . . . Essex

NON-MATRICULATED STUDENTS.

2 Allan, W. N. . . . . Nelson, B.C.
1 Anderson, H. M. . . . . . . Strathroy
2 Arthur, M. . . . . Sudbury
1 Bennett, S. G. . . . . Toronto
1 Black, A. P. . . . . Eglinton
3 Brown, M. B. . . . . Toronto
1 Burns, J. L. . . . . Vancouver, B.C.
2 Campbell, G. C. . . . . Peterboro
1 Christie, R. M. . . . . Lacombe, Alta.
1 Coste, E. F. . . . . Toronto
Curry, W. H. . . . . Toronto
7 DeGruchy, P. C. . . . . Toronto
4 Edwards, G. R. . . . . Toronto
7 Gale, W. D. . . . . . Waterville, Que.
1 Gooderham, G. A. . . . . Toronto
1 Greenwood, A. H. . St. Catharines
1 Hill, W. G. . . . . Toronto
7 Hubbert, S. . . . . Toronto
7 Jones, C. M. . . . . Toronto
1 Little, A. M. . . . . Toronto
1 MacMillan, E. A. . St. Catharines
1 McIntosh, J. R. . . . . Toronto
1 McLaughlin, J. . . . . Ottawa
7 Martin, E. T. . Waddington, N.Y.
3 Munro, D. L. . . . . Toronto
7 Nichols, J. A. . . . . Beachville
1 Raymond, H. . . . . . . Regina, Sask.
3 Ross, S. W. . . . . Toronto
7 Rothwell, H. D. . . . . Gilford
2 Simpson, L. F. . . . . Hamilton
1 Smith, H. M. . . . . Goderich
3 Temes, C. N. . . . . Toronto
1 Wilson, H. P. . . . . Toronto
1 Woollard, M. S. . . . . Toronto

Second Year.

1 Abendana, E. M.
Port Antonio, B.W.I.
7 Allen, R. J. . . . . Wallaceburg
3 Anderson, A. S. . . . . Peterboro
1 Avery, C. R. . . . . Toronto
1 Bach, W. A. . . . . Toronto
4 Baldwin, L. C. M. . . . . Toronto
2 Banks, H. R. . . . . Toronto
1 Beatty, F. W. . . . . Pembroke
1 Beatty, W. B. . . . . Sarnia
7 Bell, R. S. . . . . Toronto
2 Bell, C. A. . . . . Toronto
2 Binns, R. E. . . . . Toronto
1 Black, H. M. . . . . Acton West
1 Black, B. S. . . . . Toronto
1 Blackwell, W. R. . . . . . . Peterboro
1 Blain, D. . . . . Toronto
1 Bogue, A. H. . . Moose Jaw, Sask.
5 Bonham, A. R. . . . . Toronto
7 Bonter, E. R. . . . . Trenton
1 Boyd, M. de G. . . . . Bobcaygeon
4 Brown, B. . . . . Toronto
2 Buchanan, T. R. . . . . Thessalon
7 Buchanan, W. B. . . . . . . Vandeleur
3 Burrows, B. H. A. . . . . Toronto
2 Caldwell, W. B. . . . . Toronto
4 Cameron, W. E. . . . . Cornwall
1 Cameron, O. L. . . . Winnipeg, Man.
1 Campbell, L. L. . . . . . . Orangeville
7 Campbell, H. A. . . . . Toronto

2 Carlyle, R. T............Toronto
3 Carmichael, R. M.........Kenora
7 Carrie, G. M.........Owen Sound
2 Chambers, E. V.......Woodstock
1 Christner, J. C..........Innerkip
2 Clark, H. A............Toronto
6 Clarkson, G. E..........Toronto
3 Clegg, B. D..........Peterboro
7 Clipsham, K. M..........Toronto
7 Coleman, J. H...........Toronto
4 Cook, G. M.........St. Thomas
1 Coombs, J. A..............Blyth
4 Coon, B. R..............Toronto
7 Corbould, C. E. B.
New Westminster, B. C.
1 Cotton, C. P............Toronto
1 Dashwood, R............Barrie
3 Dates, A. J..........Owen Sound
1 Davis, W. R.............Toronto
1 Davison, R. F..Bridgewater, N.S.
3 Davison, H. D..Bridgewater, N.S.
7 Deitch, E. L............Toronto
7 Delahey, W. A.........Pembroke
3 Delamere, R. D..........Toronto
2 Diamond, R. W..........Toronto
5 Doncaster, L. W.........Toronto
7 Duncan, W. G........Port Dover
1 Earls, E. J.............Toronto
1 Fairhead, N. A..........Toronto
3 Fellowes, K. C..........Toronto
7 Ferguson, D. G.......St. Thomas
1 Fiddes, F. R.............London
1 Fleming, D. H. Pelee Island South
1 Folliott, W. G..............King
3 Foote, F. F.......Port Dalhousie
1 Forgie, L. C........Buffalo, N. Y.
1 Fowlds, E. S...........Hastings
1 Galbraith, J. S..........Toronto
2 Garnham, W. H...........Cayuga
1 German, A. M...........Welland
1 Godson, H. P............Toronto
1 Goodman, H. M.........Toronto
1 Gray, A. G..............Toronto
3 Gray, A. J........Victoria, B.C.
1 Gray, E. R..........Tillsonburg
7 Harris, H. C..........Kingsville
1 Hawley, H. A............Toronto
1 Hayden, J. M............Cobourg
1 Hayman, A. W...........London
1 Hearn, R. L.............Toronto
1 Heinonen, H. J..........Toronto
3 Henry, R. A..............Barrie
7 Hill, T. A...........Ninga, Man.
1 Holden, O...............Toronto
1 Howard, J. T............Toronto
7 Howlett, T. F...........Howlett
5 Huether, J. C.............Berlin

1 Ireson, E. T.............Toronto
1 Johnson, G. R.......Fernie, B.C.
1 Kay, J..................Toronto
Keefer, N. G.............Toronto
7 Kerr, A. E.............Hamilton
7 Kilmer, C. E............Toronto
1 Laing, J. S................Essex
1 Lamb, T. F.....St. John's, Nfld.
7 Leslie, A............Owen Sound
Levy, C. C..Savanna-la-Mar, B.W.I
4 Livingston, H. D.......Brantford
7 Lorimer, N. H.
Prince Albert, Sask.
6 Maclachlan, K. S........Toronto
1 MacKenzie, H. R..Scotsburn, N.S.
7 MacKenzie, H. A......Hyde Park
MacQuarrie, A. H........Valetta
1 MacTavish, W. H......Van Camp
4 McConnell, R. S......Walkerton
1 McEachren, F. Y........Toronto
1 McFaul, W. L........Owen Sound
1 McGill, S. B............Toronto
1 McKenzie, R. J....Niagara Falls
1 McPherson, A. R...... Petrolia
3 McQueen, P. H.........Chesley
4 Meahan, P. W.
Bathurst Village, N.B.
1 Mickleborough, K. F. Regina, Sask.
7 Mickler, G. J............Preston
1 Millman, N. C...........Toronto
1 Moore, T. R.............Toronto
1 Mulqueen, F. J..Sao Paulo, Brazil
1 Murdie, W. C..........Winthrop
2 Mutch, D. A. S..........Toronto
5 Otto, C. J..............Toronto
7 Peart, J. W..........St. Thomas
1 Pennington, C. W.........Dundas
1 Perron, E...Mitabetchouan, Que.
1 Phillips, J. J.........Whittington
1 Pilley, H. C............Bradford
1 Quail, H. C.............Toronto
7 Ratz, E. G...............Elmira
6 Relyea, P. J............Cornwall
1 Riddell, J. M...........Toronto
1 Ritchie, J. E...........Berkeley
1 Robertson, C. S..........Mohawk
7 Rous, C. C..............Toronto
7 Russell, C. H........Waubaushene
1 Rutherford, F. S..........Boulton
7 Scarlett, A. A...........Toronto
7 Sewell, L............Cedar Grove
7 Sharp, M. C.............Toronto
Shaw, K. E.........Wallaceburg
3 Sims, F. R..........New Durham
2 Sinclair, D. G............Sarnia
1 Sinclair, R. B....Kamloops, B.C.
1 Slattery, B. P............Ottawa

Soper. R. W..........Port Perry
Spellman, W. A.........Hastings
Strathearn, R. G. M.....Midland
Strathy, J. M........Port Arthur
Tackaberry, S. G.........Toronto
Tasker, R................Toronto
Thomas, H. T..........Colborne
Thompson, W. K........Toronto
Thompson, J. M......Mount Healy
Thomson, D. J.......Owen Sound
Torrance, T. E..............Galt
Tillson, G. D........Tillsonburg
Trow, R. M...........Stratford
Ure, W. G............Woodstock
Von Gunten, C. F......Blenheim
Watts, R. E...........Brantford
Webster, C. A...........Toronto
Webster, H.............Toronto
Weir, D. H.............Cathcart
Whately, H. E.........Thornbury
Wigle, J. A. H.........Kingsville
Williams, M. J...........Toronto
Winters, W. S...........Toronto
Wood, R. F. B...........Toronto
Worthington, A. N. Edmonton, Alta.
Wright, A. J..........Washington
Young, R. B...Ft. Steele, B.C.

Third Year.

Aitken, J.............Brantford
Alison, A. E..............Toronto
Allan, L. B..............Toronto
Archer, E. G...........Petrolia
Badgley, L. A...........Canfield
Bartley, T. H............Toronto
Batten, H. L............Toronto
Berkeley, G. L........Belleville
Billings, J. H............Leskard
Bissett, J. R..........Kincardine
Boswell, W. O............Toronto
Bowman, F...............Berlin.
Brackinreid, T. W........Toronto
Brereton, L. R...........Toronto
Brock, W. M.......Thamesford
Brouse, W. H. D.........Toronto
Brown, H...........Port Sydney
Cain, E. T...............Sanford
Cameron, C. S.........Beaverton
Campbell, C. D....Calgary, Alta.
Chadwick, W. W.......Hamilton
Chandler, R. B..........Toronto
Charlton, O. W. N........Toronto
Cherry, P. G.....Winnipeg, Man.
Chesnut, E. F...........Toronto
Clark, H. J...........Wellington
Clark, F. W.............Toronto
Clarke, J. E..............Toronto
Cleary, F. S............Windsor
Cole, D. B..............Toronto
Cook, A. S............Ingersoll
Cornell, C. W...........Toronto
Crouch, M. E....Rochester, N.Y.
Cruthers, W. M.........Oakville
Cummins, O. F.........Chepstow
Cunerty, T. J............Toronto
Cunningham, C. H......Hamilton
Curtis, W. T........Tillsonburg
Curzon, J. H............Toronro
D'Alton, F. K............Weston
Davis, W. B..Maple Creek, Sask.
DeGuerre, F. C.............Galt
Downing, F. H............Lucan
Dunbar, W. B.........Dunbarton
Eckert, C. H............London
Elliot, J. A..............Toronto
Elliott, G. R............Goderich
Elliott, C. F.............Toronto
Farquharson, W.......Walkerton
Farrell, K. A............Toronto
Farrelly, T. J..............Alma
Flook, S. E..........Willowdale
Flynn, C. C..............London
Frankel, E. L............Toronto
Freeman, J. R..........Brighton
Freeland, E. E...........Toronto
Frid, H. P............Hamilton
Fuller, R. J............Waterford
Fyfe, H. D......Vancouver, B.C.
Gooderham, J. L..........Toronto
Grafton, S. G............Toronto
Grant, A.................Sarnia
Gravely, T. G............Toronto
Green, R. E.............Toronto
Greene, E. A............Toronto
Hadcock, J. P.......Orangeville
Hall, H. G...........Woodstock
Hamilton, G. M...New Hamburg
Hamilton, J. R...Winnipeg, Man.
Harcourt, H. E..........Toronto
Hastings, M. B..........Midland
Heebner, M. B.......Lee, Mass.
Helson, F. I.............Lindsay
Hill, H. R. ....Toronto
Hill, A. V...........Owen Sound
Huff, A. J.......Edmonton, Alta.
Huffman, K...............Toronto
Hyatt, H................Toronto

1 Jarvis, R. H..............Toronto
1 Jones, L. E.........Calgary, Alta.
1 Junkin, R. L..............Toronto
1 Kelly, E. A......Winnipeg, Man.
4 Kirkwood, M.............Toronto
3 Lanning, J, Leading Tickles, Nfld.
1 Lawless, N...............Toronto
1 Leadman, H. L...........Medina
1 Lethbridge, W. R..........Fingal
2 Lieberman, M............Toronto
3 Lillie, G. L...............Orillia
4 Long, A. L......New York, N. Y.
1 Lowrie, A. W. P...........Russell
3 Lytle, L. B...............Tralee
3 MacAndrew, W. M......Renfrew
3 Macaulay, R. V...........Toronto
4 MacBain, J. T......Buffalo, N. Y.
1 MacBeth, R. E. A.........Toronto
1 McColl, E. B.............Glencoe
1 Macdonald, F. M.........Toronto
3 MacKenzie, W. S......Woodstock
1 MacLaurin, J. G...Brandon, Man.
1 McAndrew, J. B.....St. Catharines
1 McCarthy, T. V........Pembroke
2 McDougal, A. C..........Ottawa
3 McEachern, J. A.......Strathburn
3 McElroy, R. W...........Toronto
3 McEwen, H. J........Brantford
1 McFadyen, A. J.........Bolsover
3 McGhie, W. G.......St. Catharines
3 McKenzie, D. A., Wawanesa, Man.
McKirdy, W. S...........Nipigon
2 McLaren, A. J...........Ottawa
1 McLeish, A. G............Sable
1 McLellan, R. A...Edmonton. Alta.
2 McPherson, W. B.........Toronto
3 McQueen, A. A...........Toronto
4 Madill, H.H.............Toronto
3 Martin, J. C............Ponsonby
3 Meadows, C. A..........Toronto
1 Mills, L. G..............Toronto
1 Mitchell, L..............Meaford
1 Morphy, J. A............Oshawa
1 Murphy, M. H...........Toronto
1 Murton, J. C.............Fergus
3 Niebel, E. H............Norwood
3 Nixon, C. K.............Toronto
3 Noble, E.S..............Toronto
1 Northey, R. K...........Toronto
2 O'Flynn, W.A.....Rossland, B. C.
1 Oke, W. V...............Toronto
2 Orr, J.A...............Clarkson's
3 Parker, J.S., North Battleford, Sask.
3 Parkin, J. H.............Toronto
1 Patton, J. M......Regina, Sask.
1 Paul, R.A................Listowel
3 Pearson, C. L...........Aurora

1 Pepler, S. J...............Toronto
3 Perrin, W. J............Wroxeter
1 Pick, B. W..........Glen Meyer
1 Pickard, R. T.....Winnipeg, Man.
3 Porte, E. H.........Aylmer (West)
1 Powell, J.................Toronto
1 Pratt, F. M..............Ottawa
4 Pullan, H................Toronto
1 Quinlan, L. J......Edmonton, Alta.
1 Railton, L. W.....Newport, Eng.
1 Ratz, J. E................Elmira
1 Read, F. N...Kerr Robert, Sask.
4 Reid, E. V...............Toronto
1 Richardson, W. A.........Toronto
1 Robinson, W. E...Winnipeg, Man.
1 Roblin, H. L.............London
1 Rothery, L. W...........Toronto
1 Rowe, T. L. F............Toronto
3 Runciman, A. S.........Stratford
1 Rust, F. C...............Toronto
3 Rutley, F. G.............Toronto
1 Salter, E. M.............Toronto
1 Scandrett, F. R.........Belgrave
5 Scott, J. W..............Toronto
3 Seaton, N. D..........Springville
1 Sharpe, D. N.............Lindsay
4 Sheard, P................Toronto
4 Sibbett, W. A........Bracebridge
2 Sills, C. P...............Seaforth
1 Smith, K. H..............Harrow
3 Smith, M. L.
New Westminster, B.C.
1 Sneath, R. G.............Toronto
3 Soules, L. V.............Toronto
3 Squire, G. E, Churchbridge, Sask.
3 Steele, W. S ....St. Thomas
5 Stewart, A. E............Toronto
3 Stewart, R..............Welland
3 Story, R. A......Wawanesa, Man.
1 Sutherland, D............Toronto
1 Szammers, C. F..........Toronto
3 Taylor, R................Toronto
1 Temple, J. B.............Toronto
3 Thomas, G. C.............Barrie
1 Torrance, R. D., Calgary,...Alta.
1 Tough, W. G.............Toronto
1 Train, C. W............Haileybury
1 Vickers, N...............Renwick
2 Waite, J. H.C........Port Hope
1 Walcott, W. D.,
Savanna-la-mar, Jamaica
3 Wallace, G. L..........Greenbank
1 Wardell, A...............Toronto
1 Watson, F. E.............Toronto
1 Watts, E. M...St. Louis, Mo.
5 Welford, P. G..Bloomfield, N. J.
2 Wheler, A. G., Edgewood Park, Pa.

3 Wilkes, G. H.....Winnipeg, Man.
5 Williams, E. R...........Toronto
3 Wilson, H. A............Glenora
3 Wood, C. S........Victoria, B. C.
3 Woods, W. H.............Toronto
1 Worden, W. G.......St. Thomas
1 Wright, W. J. T..........Toronto
1 Wrong, F. H.............Windsor
2 Wylie, W. H.......St. Catharines
3 Wyman, H. K...............Essex
3 Yorke, L. P.............Belmont
1 Young, S............Owen Sound
3 Young, A...............Binbrook
1 Zinkan, W. E........Southampton

Fourth Year.

2 Adams, J. H..............Toronto
1 Amsden, W. G...........Toronto
1 Arens, R. J................Orillia
2 Austin, E. T..............Whitby
1 Baird, J. A..........Leamington
1 Barber, T................Meaford
1 Barber, H. C.............Toronto
1 Barnett, H. A............Toronto
2 Bissett, D. G....Strathcona, Alta.
3 Blizard, D. C.............Toronto
1 Bowman, E. P.....West Montrose
2 Brock, A. F....Dawson City, Y. T.
3 Burgess, J. R...........Havelock
3 Campbell, A. D..........Stayner
3 Carlyle, W. M............Toronto
3 Chesnut, A. W............Toronto
1 Chisholm, D. C...Winnipeg, Man.
1 Clark, H. S. ......Pt. Dalhousie.
1 Cline, C. G...East Aurora, N. Y.
3 Cockburn, L. S...........Toronto
3 Code, A. G.................Perth
1 Colquhoun, G. A...Vankleek Hill
4 Craig, S. E.............Snelgrove
3 Crosby, T. H......Vancouver, B.C
3 Dean, C. D..............Toronto
3 Dobbin, R. L...........Peterboro
3 Dobson, W. P..........Fordwich
2 Emery, V. H..........Aldershot
3 Ferguson, C. R.........Brampton
3 Ferguson, J. W.........Brampton
4 Fisken, J. B. K...........Toronto
3 Fletcher, F. T......Calgary, Alta.
1 Fletcher, A. W..........Thornton
2 Foreman, J. M...........Lucan
3 Foulds, W. C.............Toronto
1 Fraser, A...........London, Eng.
3 Gall, H..................Toronto
1 Galletly, J. S............Brooklin
1 Gibson, M. M.........Willowdale
1 Glover, A. E......Edmonton, Alta.
1 Goad, V. A. E.............Toronto
3 Gourlay, V. F................Galt
1 Gray, J. E. ....Uxbridge
2 Greene, R. L..............Toronto
5 Harris, J. H..............Toronto
1 Harvie, N. J...............Orillia
3 Holmes, C..............Chatham
3 Hopkins, P. E..........Kinmount
2 James, F. L..........Tillsonburg
1 Johnston, H. C...........Toronto
1 Johnston, R. H...Edmonton, Alta.
1 Keith, J. C.........Calgary, Alta.
2 Kennedy, H. G...........Toronto
3 Kingstone, G. A..........Toronto
2 Kirwan, G. L.............Ottawa
1 Knight, S...........Bruce Mines
3 Leaver, C. B.............Toronto
3 Lee, R. G................Toronto
1 Leitch, J. N...............Toronto
1 Macdonald, G. A...Fernie, B. C.
1 Macdonald, J. A.......Ridgetown
3 Macdonald, J. B...Victoria, B. C.
1 MacKinnon, J. A....Calgary, Alta.
1 MacLeod, D. D.........Park Hill
3 MacMurchy, H. G........Toronto
3 MacTavish, H. J..........Toronto
3 McAlpine, D. D.............Iona
4 McBride, T. C.......London, Ont.
3 McCordick, A. S....St. Catharines
1 McDougal, S. G..........Ottawa
1 McNiven, J..............Putnam
3 McSloy, J. I........St. Catharines
2 Maisonville, A. W. R.,
Pilette's Corner
1 Martin, W. H.....Edmonton, Alta.
1 Martindale, E. S.......Kings Mill
1 Martyn, O.W............Mitchell
2 Matthews, A. C...........Toronto
3 Merriman, H. O.........Hamilton
1 Milligan, F. S............London
3 Milligan, G. L..........Brampton
3 Mills, P. E...............Toronto
1 Mortimer, F. R..............Arva
1 Munro, A. H...........Peterboro
1 Neville, E. A...........Ruthven
1 Newhall, V. A.....Toledo, Ohio
2 Newton, W. E...........Toronto
1 Nichol, F. T..............Beeton.
1 O'Neil, C. M....Erindale-on-Credit
3 Palmer, C. E.......Richmond Hill

3	Parker, G. C.	Toronto
3	Pearce, K. K.	Port Hope
3	Phillips, C. H.	Toronto
1	Pigott, R. B.	Hamilton
1	Potter, R. B.	Toronto
1	Ramsay, W. S.	St. John's, Nfld.
3	Richardson, C. E.	Toronto
3	Sara, R. A.	Toronto
1	Schlarbaum, A.	Galt
3	Sparling, M. W.	Toronto
2	Steele, A. L.	Fergus
2	Steven, H. M.	Toronto
1	Stewart, N. C.	Nelson, B.C.
1	Street, J. C.	Toronto
5	Sutherland, A. L.	Edmonton, Alta.
1	Sutherland, C. C.	Edmonton, Alta.
1	Sword, A. D.	Toronto
3	Thompson, R. M. A.	Strathroy
3	VanAllen, K. M.	Toronto
3	Van Norman, C. P.	Toronto
1	Venney, L. T.	Brockville
1	Walker, C. M.	Revelstoke, B.C.
2	Walton, T.	London
1	Warrington, G. A.	Cornwall
3	Watson, M. B.	Toronto
2	Waugh, B. W.	Berlin
3	White, F. C.	Chatham
4	Wickens, W. S.	Toronto
3	Williams, G. K.	Toronto
3	Wilson, L.	Brampton
3	Wilson, F. F.	Edmonton, Alta.
3	Woods, M. H.	Aylmer (West)
2	Wookey, S. A.	Victoria, B. C.
3	Wright, L. A.	Toronto
3	Youell, A. W.	Aylmer
1	Young, W. S.	Guelph

Occasional Students.

McAuslan, H. J.	North Bay.

Art Students taking instruction in Chemistry, Assaying, etc.

Alcock, F. J.	Meaford.
Freeman, D.	Bowesville.
Hodgins, E. P.	Granton.
Latimer, W. H.	Toronto.
Mahaffy, A.	Cromarty.
Morrison, W. J.	Alliston.
Whittaker, E. J.	Seaforth.

Summary.

First Year Students	274
Second Year Students	167
Third Year Students	204
Fourth Year Students	125
Occasional Students	1
Arts Students	7
	778

PRIZEMEN.

Engineering.

1879.	I.	Year	J. McAree	1st	Prize.
1880.	II.	"	J. L. Morris	1st	"
1881.	I.	"	G. H. Duggan	1st	"
	II.	"	D. Jefferey	1st	"
1882.	I.	"	A. R. Raymer	1st	"
	I.	"	E. W. Stern	2nd	"
	II.	"	G. H. Duggan	1st	"
	III.	"	D. Jefferey	1st	"
1883.	I.	"	B. A. Ludgate	1st	"
	I.	"	A. M. Bowman	2nd	"
	II.	"	A. R. Raymer	1st	"
	II.	"	E. W. Stern	2nd	"
	III.	"	G. H. Duggan	1st	"
1884.	II.	"	B. A. Ludgate	1st	"
	III.	"	E. W. Stern	1st	"
	III.	"	A. R. Raymer	2nd	"
1885.	I.	"	A. E. Lott	1st	"
	I.	"	J. Rogers	2nd	"
	II.	"	T. K. Thomson	1st	"
	III.	"	B. A. Ludgate	1st	"
1886.	I.	"	C. H. C. Wright	1st	"
	I.	"	J. E. Ross	2nd	"
	II.	"	A. E. Lott	1st	"
1887.	I.	"	H. E. T. Haultain	1st	"
	II.	"	C. H. C. Wright	1st	"
	III.	"	A. E. Lott	1st	"
	III.	"	J. Rogers	2nd	"
1888.	I.	"	E. B. Merrill	1st	"
	I.	"	F. M. Bowman	2nd	"
	II.	"	D. D. James	1st	"
	III.	"	C. H. C. Wright	1st	"
1889.	I.	"	J. K. Robinson	1st	"
	I.	"	G. E. Silvester	2nd	"
	II.	"	E. B. Merrill	1st	"
	II.	"	F. M. Bowman	2nd	"
	III.	"	D. D. James	1st	"
1890.	I.	"	C. Fairchild	1st	"
	II.	"	E. B. Merrill	2nd	"
	III.	"	J. K. Robinson	1st	"
	III.	"	F. M. Bowman	1st	"

1891.	I.	Year	A. J. McPherson	1st Prize.
	I.	"	R. B. Watson	2nd "
	II.	"	J. B. Goodwin	1st "
	III.	"	G. E. Silvester	1st "
	III.	"	C. W. Dill	2nd "
1892.	I.	"	A. E. Bergey	1st "
	I.	"	R. W. Angus	2nd "
	II.	"	A. J. McPherson	1st "
	II.	"	R. B. Watson	2nd "
	III.	"	E. J. Laschinger	1st "
	III.	"	C. Fairchild	2nd "

The Grant of prizes was withdrawn at the close of 1892.

Architecture.

The price in Architecture was the gift of Mr. D. B. Dick, Architect, Toronto.

1891.	I. Year	H. F. Ballantyne.
1892.	I. Year	J. A. Ewart.
1893.	I. Year	A. H. Harkness.
1894.	I. Year	E. A. Forward.
1895.	I. Year	W. F. Scott.
1896.	I. Year	D. Macintosh.
1899.	I. Year	W. F. Shepherd.

Civil Engineering.

Prizes are awarded for general proficiency in the subjects of the Third Year.

Date.	Name	Donor.
1897.	M. B. Weekes	T. Kennard Thomson, C.E.
1898.	J. A. Stewart	"
1899.	T. Shanks	"
1900.	E. H. Phillips	"
1901.	H. P. Rust	"
1902.	W. F. Ratz	"
1093.	C. R. Young	"
1904.	W. N. Moorhouse	"
1905.	W. Barber	"
1905.	N. L. Crosby	Noel Marshall, Esq.
1906.	W P. Near, B.A	T. Kennard Thomson, C.E.
1906.	W. A. M. Cook	Noel Marshall, Esq.
1907.	M. K. McQuarrie	T. Kennard Thomson, C.E.
1907.	T. H. Hogg	Noel Marshall, Esq.
1908.	M. Pequegnat	T. Kennard Thomson, C.E.
1909.	E. S. Martindale	"
1910.	W. H. Wilson	"

Mining Engineering.

1905.	G. S. Scott	Hon. W. H. Montague, M.D.
1905.	W. A. Begg	"
1906.	J. A. McKenzie	"
1906.	W. Huber	"
1907.	B. Neilly	"

Mechanical Engineering.

1905.	W. G. Nicklin	Standard Silver Co.
1906.	D. W. Marrs	" " "
1907.	H. O. Hill	" " "

Electrical Engineering.

1905.	C. E. Sisson	Noel Marshall, Esq.
1906.	A. H. Hull	" " "
1907.	F. R. Ewart	" " "

Mechanical and Electrical Engineering.

1897.	A. T. Gray	F. A. Riehle, Esq.
1898.	F. C. Smallpiece	"
1905.	C. B. Aylesworth	Standard Silver Co.
1906.	E. M. Wood	" " "
1907.	H. Raine	" " "

Architecture.

1906.	A. W. McConnell	Hon. W. H. Montague, M.D.
1907.	G. N. Molesworth	"

Analytical and Applied Chemistry.

1906.	C. C. Forward	Standard Silver Co.
1907.	P. F. Morley	" " "

Degree of Bachelor of Applied Science.

1909. Akers, H. G.
1908.*Allen, F. G.
1893. Alison, T. H.
1909.*Amos, W. L.
1908. Anderson, F. J.
1910.*Anderson, R. M.
1897.*Angus, R. W.
1904.*Angus, H. H.
1901. Ardagh, E. G. R.
1907. Armer, J. C.
1896. Armstrong, J.
1897.*Bain, J. W.
1907. Baker, M. H.
1894.*Ballantyne, H. F.
1907.*Banting, E. W.
1906.*Barber, W.
1901. Barley, J. H.
1910. Barry, W. H.

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*Degree with honours.

1910. Bartlett, E.
1907. Bates, M.
1910.*Bennett, G. A.
1910. Beckstedt, R. D. S.
1907.*Betts, H. H.
1902. Barrett, R. H.
1895. Beauregard, A. T.
1906. Begg, W. A.
1908.*Beynon, D. E.
1910. Black, W. D.
1910.*Black, G. E.
1910.*Blackwood, W. C.
1910. Birchard, E. R.
1910. Bowers, G. H.
1903. Blair, W. J.
1905. Bonnell, M. B
1902.*Boswell, M. C.
1910. Bowen, G. H.
1908. Bowman, H. D.
1899. Boyd, W. H.
1909. Brady, W. S.
1902. Brandon, E. T.
1907. Brandon, H. E.
1909. Brechen, P. R.
1903. Brereton, W. P.
1907. Brian, M. E.
1896. Brodie, W. M.
1910. Brown, C. E.
1909. Brown, J. A.
1906. Brown, T. D.
1910. Brown, T. W.
1910. Browne, E. W.
1909. Buchan, P. H.
1895. Bucke, W. A.
1910. Burns, J.
1909. Bush, C. E.
1907. Bunnell, A. E. K.
1906. Burnham, F. W.
1900. Burnside, J. T. M.
1905. Burwash, N. A.
1910. Cameron, M. G.
1905. Calder, J. W.
1909. Campbell, A. W.
1905. Campbell, A. J.
1905. Campbell, A. M.
1910. Campbell, J. E.
1898. Carpenter, H. S.
1909. Carscallen, H. R.
1899. Carter, W. E. H.
1903.*Chace, W. G.
1903.*Chadsey, S. B.
1898. Charlton, H. W.
1909. Chestnut, F. H.
1894.*Chewett, H. J.
1903.*Christie, W.
1905. Christie, U. W.
1906. Coates, P. C.
1905.*Code, T. F.
1910.*Coltham, G. W.
1900.*Chubbuck, L. B.
1902. Cockburn, J. R.
1909. Collett, W. C.
1910.*Cooch, H. A.
1910. Collinson, J. G.
1907.*Cook, W. A. M.
1909. Cory, R. Y.
1900. Coulthard, R. W.
1907. Cousins, E. L.
1909. Cowper, G. C.
1909.*Coyne, H.
1901. Craig, J. A.
1905. Crerar, S. R.
1906.*Crosby, N. L.
1909. Culbert, J. V.
1903.*Culbert, M. T.
1910.*Cummings, J. D.
1909.*Dahl, A. D.
1910.*Dallyn, F. A.
1907. Daniels, W. N.
1910.*Davis, A. I.
1909. Davis, R. S.
1901. Davison, J. E.
1905. Davison, A. E.
1907.*Death, N. P. F.
1902. DeCew, J. A.
1910. Delahaye, W. H.
1910. Derham, W. P.
1901. Dickson, G. W.
1901.*Dixon, H. A.
1896. Dobie, J. S.
1910.*Dodds, W. A.
1907. Dundass, C. S.
1909.*Dyer, F. C.
1902.*Eason, D. E.
1909. Edwards, C.
1904. Edwards, W. M.
1897.*Elliott, H. P.
1903. Empey, J. M.
1910. Evans, S. L.
1908. Evans, S. D.
1895.*Ewart, J. A.
1908.*Ewart, F. R.
1910. Falconer, F. S.
1910. Fargey, T. A.
1904. Fensom, C. J.
1906. Ferguson, G. H.
1910. Fergusson, A. T.
1906.*Fierheller, H. S.
1910. Flanagan, O. L.
1910. Flint, C.
1905.*Ford, A. L.
1901. Foreman, W. E.

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*Degree with honours.

1909. Foster, A. H.
1910. Freeman, T. E.
1910. Frost, E. R.
1908. Fux, P. C.
1904.*Gaby, F. A.
1903.*Gagne, S.
1908.*Galt, G.
1904. Gardner, J. C.
1908.*Garrow, A. B.
1903.*Gibson, A. E.
1904.*Gibson, N. R.
1904. Gibson, W. S.
1904.*Gillespie, P.
1909. Gillies, A.
1894. Goodwin, J. B.
1910. Graham, D. A.
1908.*Graham, C. W.
1899. Grant, W. F.
1908. Grasett, C. S.
1910. Grassie, C. A.
1898. Gray, A. T.
1905. Gray, W. W.
1910. Greene, G. E. D.
1909. Greene, P. W.
1905. Greenwood, W. K.
1907. Guest, W. S.
1909.*Gulley, C. L.
1910. Gunn, W. W.
1901. Guy, E.
1909. Hackner, J. W.
1908.*Hagarty, R. E. W.
1897.*Haight, H. V.
1909. Hall, K.
1904. Hamilton, J. F.
1907. Hamilton, C. B.
1909. Hamilton, C. T.
1905. Hanes, G. S.
1900. Hare, W. A.
1897.*Harkness, A. H.
1908.*Harkness, A. L.
1906. Harris, C. J.
1908. Harrison, E.
1907. Hartney, J. C.
1902. Harvey, C.
1910. Harvey, D. W.
1901. Hemphill, W.
1909. Hendry, M. C.
1895. Herald, W. H.
1906.*Heron, J. B.
1907. Hett, S.
1906. Hewson, W. G.
1908.*Hill, H. O.
1908.*Hogg, T. H.
1901. Holcroft, H. S.
1910. Holmes, A. E.
1908. Hookway, C. W.
1907. Hopkins, C. H.
1910. Hoshal, G. C.
1909.*Huether, D. J.
1909. Huether, A. D.
1910. Hughes, C.
1908.*Hull, A. H.
1896. Hull, H. S.
1910. Hunter, A. E.
1909. Hunter, A. N.
1908.*Hutton, C. H.
1908. Hyland, H. M.
1908. Hyman, E. W.
1908.*Ireland, L. G.
1910. Irwin, H.
1910. Isbister, J.
1910. Jackes, F. P.
1909. Jackson, W.
1894. James, D. D.
1905. James, E. A.
1910. James, E. W.
1893. James, O. S.
1905. Jermyn, P. V.
1905.*Job, H. E.
1895. Johnson, S. M.
1902. Johnson, J. A.
1896. Johnson, A.C.
1910. Johnson, C. C.
1907. Johnston, C.
1910. Johnston, J. T.
1907. Jones, G. R.
1907. Jones, T.
1907. Jupp, A. E.
1908. Kay, E. W.
1894.*Keele, J.
1910. Kemp, J. B. O.
1909. Keppy, J. D.
1910. Key, W. R.
1908. Kinghorn, A. A.
1910. Klotz, H. N.
1903. Knight, R. H.
1989. Kormann, J. S.
1894. Laidlaw, J. T.
1893. Laing, A. T.
1909. Lamb, F. C.
1910. Lamont, A. W.
1906. Lancaster, H. M.
1907. Lang, J. L.
1910.*Langmuir, C. B.
1903. Langmuir, F. L.
1893.*Laschinger, E. J.
1901. Latham, R.
1906. Latornell, A.
1906. Latornell, A. J.
1893.*Lawson, W.
1893. Lea, W. A.
1910.*Lennox, A. E.

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*Degree with honours.

1908. LePan, A. D.
1909.*Leslie, J. N. M.
1908. Linton, A. P.
1906.*Loudon, T. R.
1907. MacKenzie, K. A.
1894. McAllister, A. L.
1895. McAllister, J. E.
1893. McAree, J.
1905. McAuslan, H. J.
1904. McBride, A. H.
1910. McCollum, C. R.
1907.*McConnell, A. W.
1905. McCuaig, O. B.
1910. McCuaig, P. J.
1893. McEntee, B.
1905. McEwen, G. G.
1904. McFarlane, J. A.
1906. McFarlane, W. G.
1908.*McFarlane, J. B.
1905.*McGibbon, C. P.
1896.*McGowan, J.
1908.*McGugan, D. J.
1905. McKay, C. D.
1896.*McKinnon, H. L.
1909. McLean, L. A.
1903. McMaster, A. T. C.
1901. McMillan, J. G.
1910. McMillan, V.
1909. McMordie, H. C.
1908. McNeill, F. W.
1894.*McPherson, A. J.
1909.*McRoberts, A. A.
1895. McTaggert; A. L.
1902.*McVean, H. G.
1897. Macallum, A. F.
1897. Macbeth, C. W.
1910. Macfarlane, E. D.
1904. Macintosh, D.
1907.*Maclachlan, W.
1910. Maclean, B. A.
1910. Macpherson, N. W.
1908. Malcolmson, W. S.
1910. Manning, N. H.
1910. Manson, A. B.
1905. Marriott, F. G.
1909. Marshall, R. J.
1897. Martin, T.
1908. Mason, D. H. C.
1903.*Matheson, P.
1908. Melson, J. W.
1907.*Menzies, J. M.
1894.*Merrill, E. B.
1908. Miller, L. R.
1908. Mills, G. G.
1893. Milne, C. G.
1896. Mines, W. H.
1909. Minns, J. B.
1895.*Minty, W.
1894. Mitchell, C. H.
1907. Mitchell, B. F.
1906. Moffatt, R. W.
1900. Monds, W.
1909. Monk, E. D.
1905.*Montgomery, R. H.
1909.*Moody, F. H.
1908. Moore, J. M.
1909. Morice, J. H.
1910. Morris, C. A.
1910. Morton, G.
1909. Mowbray, F. E. H.
1906. Munro, G. R.
1910. Munro, F. V.
1909. Murdock, C. R.
1910. Murphy, C. J.
1909.*Murray, W. P.
1909. Murray, E. W.
1907.*Near, W. P.
1901. Neelands, E. V.
1908. Neelands, E. W.
1908. Neelands, R. E. K.
1908. Neilly, B.
1904. Nevitt, I. H.
1910. Newton, J.
1907. Nicklin, W. G.
1908. Nourse, A. E.
1910. O'Hearn, J. J.
1904. Oliver, E. W.
1904. Pace, J. D.
1905. Pace, G.
1906.*Pardoe, W. S.
1907. Park, D. G.
1905. Parke, J.
1904. Patten, B. B.
1909. Peckover, H. J.
1909.*Pequegnat, M.
1910.*Petry, A. M.
1906. Phillips, E. P. A.
1904. Plunkett, T. H.
1901. Pope, A. S. H.
1907. Porte, W. B.
1910. Porter, C. J.
1903. *Powell, G. G.
1902.*Price, H. W.
1909. Prochnow, F. E.
1909. Proctor, E. M.
1909. Publow, C. F.
1907. Purser, R. C.
1908. Quance, G. E.
1906. Ramsey, G. L.
1909.*Rannie, J. L.
1909.*Ransom, J. T.
1905. Raymond, D. C.

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*Degree with honours.

1910.*Redfern, C. R.
1909.*Redfern, W. B.
1906. Reid, F. B.
1900.*Revell, G. E.
1900. Richards, E.
1910. Richardson, F. L.
1908. Richardson, C. W. B.
1910. Ricker, H. A.
1906.*Riddell, M. R.
1901. Roaf, J. R.
1903. Robertson, H. D.
1907. Robertson, N. R.
1909. Robertson, A. R.
1898.*Robinson, A. H. A.
1908. Roddick, J. O.
1907. Rogers, C. H.
1907. Rolfson, O.
1909.*Rose, R. R.
1907. Ross, R. C.
1907.*Rothwell, T. E.
1905. Roxborough, G. S.
1905. Rutherford, F. N.
1910. Rutledge, L. T.
1902. Rust, H. P.
1910. Sanderson, A. U.
1902. Sauer, M. V
1901. Saunders, H. W.
1905.*Scheibe, H. M.
1910. Schwenger, C. E.
1908.*Scott, W. A.
1900.*Shanks, T.
1909. Shaw, W. E. V.
1909. Shearer, H. F.
1905. Sheply, J. D.
1895. Shields, J. D.
1899. Shipley, A. E.
1906. Shirriff, C. H.
1903. Sinclair, D.
1906. Slater, F. W.
1902.*Smallpiece, F. C.
1898. Smiley, R. W.
1908.*Smith, D. A.
1904. Smith, H. G.
1905. Smither, W. J.
1908. Smithrim, E. R.
1894.*Speller, F. N.
1908.*Spencer, A. C.
1894. Squire, R. H.
1909. Stamford. W. L.
1909. Starr, R. H.
1910. Stayner, D. S.
1902. Stevenson, W. H.
1908. Stewart, L. D. N.
1909.*Stewart, R. B.
1909.*Stewart, W. M.
1908.*Stiles, J. A.
1909.*Stiver, J. L.
1910. Stroud, S.
1909. Stuart, H. B.
1910. Stuart, J. L. G.
1898.*Stull, W. W.
1909. Summers, G. F.
1903. Sutherland, W. H.
1910. Swan, R. G.
1906. Swan, W. G.
1910.*Tate, H. W.
1910.*Taylor, W. E.
1910. Taylor, J. W. R.
1903. Teasdale, C. M.
1900.*Tennant, D. C.
1901. Tennant, W. C.
1909. Thomas, V. C.
1908. Thompson, P. M.
1893. Thomson, R. W.
1905. Thomson, S. E.
1906. Thomson, L. R.
1907. Thomson, J. E.
1908. Thomson, O. R.
1901. Thorne, S. M.
1909. Thornley, J. H.
1901. Thorold, F. W.
1908. Tillson, E. D.
1910. Tipper, G. A.
1910. Toms, C. G.
1905. Townsend, C. J.
1905.*Townsend, D. T.
1906. Traill, J. J.
1904. Trees, S. L.
1910.*Trees, A. G.
1896. Tremaine, R. C. C.
1905. Trimble, A. V.
1905. Tucker, B. B.
1910. Turnbull, W. G.
1906.*Turner, W. E.
1910. Vatcher, A.
1900. Wagner, W. E.
1906. Wagner, H. L.
1905.*Walker, E. W.
1910. Walker, J. A.
1906. Watson, J. P.
1910. Webb, C. E.
1909. Wedlake, R. M.
1898. Weekes, M. B.
1901. Weir, H. M.
1906.*Wells, A. F.
1910.*West, A. M.
1909. White, W. J.
1908.*Wilkes, E. D.
1905.*Williams, C. G.
1899.*Williamson, D. A.
1910.*Williams, J. A. McK.
1910. Williamson, O. T. G.

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*Degree with honours.

1904.*Wilson, N. D
1908.*Wilson, J. N.
1908. Wilson, A. F.
1909.*Wilson, F. D.
1908.*Wood, E. M.
1905. Worthington, W. R.
1893.*Wright, C. H. C.
1902. Wright, R. T.
1905. Wright, W. F.
1905.*Young, C. R.
1907. Young, W. H.
1903. Zahn, H.
1909.*Zimmer, A. R.

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*Degree with honours.

Degree of Civil Engineer (C.E.)

1898. Alison, T. H.
1898. Ashbridge, W. T.
1895. Bowman, A. M.
1893. Bowman, F. M.
1892. Chewett, H. J.
1900. Connor, A. W.
1901. Francis, Walter J.
1900. Haultain, H. E. T.
1893. Innes, W. L.
1886. Kennedy, J. H.
1908. Maccallum, A. F.
1885. Morris, J. L.
1896. Moore, J. E. A.
1898. Mitchell, C. H.
1901. McDowall, R.
1895. McAllister, J. E.
1909. Oliver, E. W.
1889. Tyrrell, J. W.
1894. Tyrrell, H. G.
1892. Thomson, T. K.

Degree of Mining Engineer (M.E.)

1897. Bucke, M. A.
1900. Laidlaw, J. T.
1909. Thomson, R. W.
1910. McMillan, J. G.

Degree of Mechanical Engineer (M.E.)

1908. Fensom, C. J.
1901. Johnston, A. C.
1905. Laschinger, E. J.
1900. White, A. V.

Degree of Electrical Engineer (E.E.)

1896. Ross, R. A.
1903. Chubbuck, L. B.
1902. Elliott, H. P.
1905. Hemphill. W.

GRADUATES.

Graduates are requested to inform the Secretary of changes in their addresses.

1881.

1. J. L. Morris, C.E., O.L.S. — Pembroke, Ont.
Morris and Moore Land Surveyors and Architects.

1882.

1. D. Jeffrey — Windsor, Missouri.
Contractor.

1. J. H. Kennedy, C.E., O.L.S., — Vancouver, B.C.
Chief Engineer, Great Northern Ry.

1. J McAree, B.A.Sc., D.T.S. (deceased.)

1883.

1. D. Burns, O.L.S., A.M., Can. Soc. C.E., — Pittsburgh, Pa.
Instructor in Mathematics and Plan Drawing, Carnegie Technical Schools.

1. G. H. Duggan, M. Can. Soc. C.E., — Glace Bay, N.S.
Dominion Coal Co., Ltd.

1. J. W. Tyrrell, C. E., D.L.S., — Hamilton, Ont.
Tyrrell & MacKay, Consulting Engineers and Surveyors.

1884.

1. W. C. Kirkland, — New Orleans, La.
Principal Assistant Engineer, Drainage, Sewage and Water Board of New Orleans.

1. J. McDougall, B.A. (deceased.)

1. A. R. Raymer, — Pittsburgh, Pa.
Assistant Chief Engineer, P. & L. E. Ry.

1. James Robertson, O.L.S., — Toronto, Ont.
Commissioner, The Canada Co.

1. E. W. Stern, M. Am. Soc. C.E., — 103 Park Ave., New York.
Consulting Civil Engineer.

1885.

1. J. F. Bleakley, — Bowmanville, Ont.
Civil Engineer.

1. H. J. Bowman, D. & O.L.S., M. Can. Soc. C.E., — Berlin, Ont.
Bowman & Connor.

1. E. E. Henderson, O.L.S., — Henderson, P.O., Me
Civil Engineer.

1. B. A. Ludgate, O.L.S., — Pittsburgh, Pa.
Assistant Engineer, P. & L. E. Ry.

1. O. McKay, O.L.S., — Walkerville, Ont.
Civil Engineer and Surveyor.

1886.

1. A. M. BOWMAN, D.L.S., Pittsburgh, Pa.
   Pennsylvania Contracting Co.
1. E. B. HERMON, D. & O.L.S., Vancouver, B.C.
   Assistant Engineer Vancouver Power Co.
1. ROBERT LAIRD, O.L.S., Haileybury, Ont.
   Laird & Routly, Engineers and Surveyors.
1. T. KENNARD THOMSON C.E., M. Can. Soc. C.E., M. Am. Soc. C.E., Hudson Terminal Building, New York.
   Consulting Engineer.
1. H. G. TYRRELL, C.E., A.M. Can. Soc. C.E., 2151 Fulton Ave., Cin., Ohio.
   Chief Engineer, The Brackett Bridge Co.

1887.

1. J. C. Burns (deceased.)
1. A. E. LOTT, Los Angeles, Cal.
   Consulting Railway Engineer, 441 Bradbury Building.
1. A. L. MCCULLOUGH, O.L.S., B.C.L.S., A.M. Can. Soc. C.E., Nelson, B.C.
   Engineer and Surveyor.
1. F. MARTIN, M.B., O.LS.,
   Physician.
1. C. H. PINHEY, D. & O.L.S., 110 Wellington St., Ottawa, Ont.
1. J. ROGERS, O.L.S., Mitchell, Ont.
   Town Engineer.

1888.

1. J. F. APSEY, O.L.S., 3205 Wallbrook Ave., Baltimore, Md.
   Assistant Divison Engineer, Baltimore Sewerage Commission.
1. W. T. ASHBRIDGE, C.E., 1444 Queen St. E., Toronto, Ont.
   Engineer and Surveyor.
1. EDWARD F. BALL, A.M. Can. Soc. C.E. , 335 Madison Ave., New York, N.Y.
   Chief Assistant Engineer, Land and Tax Department, N. Y. Central & Hudson River Railroad.
1. D. B. BROWN, O.L.S., Quebec, P.Q.
   Locating Engineer, Transcontinental Ry. (G.T.P.)
1. C. M. CANNIFF, Toronto, Ont.
   Fielding & Canniff Co., Consulting Engineers.
1. H. J. CHEWETT, B.A.Sc., C.E., A.M. Can. Soc. C.E., Manning Arcade, Toronto, Ont.
   Mechanical Engineer, Evans Rotary Engine Co., Ltd.
1. J. GIBBONS, D. & O.L.S., Ottawa, Ont.
   Surveying Staff, Department of Interior.
1. R. MCDOWALL, O.L.S., C.E.,, A.M. Can. Soc. C.E.,
   Town Engineer. Owen Sound, Ont.
1. G. W. MCFARLEN, O.L.S., Toronto, Ont.
   City Engineer's Staff.
1. C. J. MARANI, Anacortes, Wash.
   Designing and Consulting Structural Engineer for the Russia Cement Co
1. G. R. MICKLE, B.A., Toronto, Ont.
   Mine Assessor, Province of Ontario.

1888—*Continued.*

I. J. H. MOORE, O.L.S., Smith's Falls, Ont.
Town Engineer.

I. G. H. RICHARDSON, Edmonton, Alta.
Managing Director Yellowhead Pass Coal & Coke Co.

I. K. ROSE, Curry Bldg., Toronto.
Manager, Evans Rotary Engine Co. of Canada.

I. J. E. ROSS, D. & O.L.S, Kamloops, B.C.
Surveying Staff, Department of Interior.

I. C. H. C. WRIGHT, B.A.Sc., Toronto, Ont.
Professor of Architecture, University of Toronto.

1889.

I. B. CAREY, Toronto, Ont.

I. W. J. CHALMERS, Pittsburgh, Pa.
With Vanport Beaver Co.

I. W. A. CLEMENT, M. Can. Soc. C.E., Vancouver, B.C.
City Engineer.

I. G. F. HANNING, Toronto, Ont.

I. H. E. T. HAULTAIN, C.E., M. Can. Soc. C.E., Toronto, Ont.
Professor of Mining Engineering, University of Toronto.

I. J. IRVINE, Vancouver, B.C.
Locating Engineer, C.N.R.

I. D. D. JAMES, B.A., B.A.Sc., 227 George St., Toronto.
Surveyor.

I. F. X. MILL. (deceased.)

I. H. K. MOBERLEY, D. & S.L.S., Moosomin, Sask.
District Engineer and Surveyor.

I. T. R. ROSEBRUGH, M.A. Toronto, Ont.
Professor of Electrical Engineering, University of Toronto.

I. T. WICKETT, M.D., 362 Cannon St. E., Hamilton, Ont.
Physician.

1890.

5 W. E. BOUSTEAD, (deceased).

I. F. M. BOWMAN, O.L.S., C.E., Pittsburgh, Pa.
Secretary & Structural Engineer, Riter-Conley Mfg. Co.

I. M. A. BUCKE, M.E. (deceased).

I. G. D. CORRIGAN, (deceased).

I. J. A. DUFF, B.A., (deceased).

I. A. B. ENGLISH, (deceased).

I. N. L. GARLAND 76 Wellington St. W., Toronto, Ont.

I. J. HUTCHEON, O.L.S., Guelph, Ont.
Engineer and Surveyor.

I. W. L. INNES, O.L.S., C.E., Simcoe, Ont.
Manager, Dominion Canners, Ltd.

I. E. B. MERRILL, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E. Toronto, Ont.
Consulting Engineer, Toronto General Trusts Building.

1890—*Continued.*

1. J. R. PEDDER (deceased).

3. R. A. ROSS, E.E. 80 St. Francois Xavier St., Montreal, Que
Ross & Holgate, Consulting Electrical and Mechanical Engineers.

1. T. H. WIGGINS, O.L.S., Saskatoon, Sask.
Civil Engineer and Dom. Land Surveyor.

1. W. J. WITHROW, Ottawa, Ont.
Patent Examiner, Patent Office.

1891.

1. H. J. BEATTY, O.L.S., Eganville, Ont.
Engineer and Surveyor.

1. T. R. DEACON, O.L.S., M. Can. Soc. C.E., Winnipeg, Man.
President and General Manager, Manitoba Bridge & Iron Works, Ltd.

1. C. W. DILL, M. Can. Soc. C.E., Toronto, Ont.
C. W. Dill & Co., Civil Engineers and Contractors, 318 Continental Life Building.

5. O. S. JAMES, B.A.Sc., 227 George St., Toronto, Ont.

1. A. LANE (deceased).

1. J. E. MCALLISTER, B.A.Sc., C.E., Greenwood. B.C.
Manager, British Columbia Copper Co., Ltd.

3. E. B. MERRILL, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E. Toronto, Ont.
Consulting Engineer, Toronto General Trusts Building.

1. J. E. A. MOORE, C.E., 10074 Kee Mar Court, Cleveland, O.
Consulting and Contracting Engineer.

1. W. NEWMAN, O.L.S., A.M. Can. Soc. C.E., Windsor, Ont.
Consulting Engineer.

1. J.K. ROBINSON (deceased).

1. W. B. RUSSEL, 318 Continental Life Bldg., Toronto, Ont.
Civil Engineer and Contractor.

1. G. E. SILVESTER, O.L.S., M. Am. Inst. M.E., Copper Cliff, Ont.
Chief Engineer, Canadian Copper Co.

1. H. D. SYMMES, Niagara Falls S., Ont.
Engineer and Contractor.

1892.

1. J. R. ALLAN, O.L.S., Macleod, Alta.
Ranchman.

1. T. H. ALISON, B.A.Sc., C.E., Bayonne, N.J.
Secretary and Chief Engineer, Bergen Point Iron Works.

1. A. G. ANDERSON, Port Dover, Ont.
Hardware Merchant.

1. C. FAIRCHILD, D. & O.L.S., Brantford, Ont.
Surveying Staff, Department of Interior.

1. J. B. GOODWIN, B.A.Sc., Gasport, N.Y.
Superintendent of Construction, Empire Eng. Corporation of New York.

4. C. E. LANGLEY, Continental Life Bldg., Toronto, Ont.
Langley & Howland, Architects.

1892—*Continued.*

1. A. T. LAING, B.A.Sc., Toronto, Ont.
Secretary, Faculty of Applied Science, University of Toronto.

1. E. J. LASCHINGER, B.A.Sc., M.E., Johannesburg, Transvaal, S.A.
Mechanical Engineer, H. Eckstein & Co.

5. W. L. LAWSON, B.A.Sc, Stirling, Col.
Manager, Stirling Brush & Fort Morgan Co.

3. W. A. LEE, B.A.Sc. (deceased).

1. B. MCENTEE, B.A.Sc., 28 Queen St. E., Toronto.
Stationer.

3. C. G. MILNE, B.A.Sc. (deceased).

1. CHAS. H. MITCHELL, B.A.Sc., C.E., M. Can. Soc. C.E., M. Am. Soc. C.E.
Consulting Hydro-Electric Engineer, Trader's Bank Bldg., Toronto.

1 N. L. PLAYFAIR, Midland, Ont.
Superintendent Playfair Lumber Co.

1. J. M. PRENTICE (deceased).

1. J. A. ROSS, Cleveland, Ohio.
Designer L. S. & M. S. Railway, Engineering Office.

1. ALBERT N. SMITH, Youngstown, Ohio.
Engineer, Wm. B. Pollock Co.

1. R. W. THOMSON, B.A.Sc., M.E., 4 Charles St. W., Toronto, Ont.
Mining Engineer.

3. A. V. WHITE, M.E., Toronto, Ont.
Mechanical Engineer.

1893.

1. A. G. ARDAGH, Barrie, Ont.
Land Surveyor and Civil Engineer.

.*H. F. BALLANTYNE, B.A.Sc. 244 Fifth Ave., New York, N.Y.
Architect.

1. G. L. BROWN, O.L.S., A.M. Can. Soc. C.E., Morrisburg, Ont.
Civil Engineer and Land Surveyor.

1.*L. C. CHARLESWORTH, D.L.S., Edmonton, Alta.
Director of Surveys for Alberta.

1. T. H. DUNN, O.L.S. Winchester, Ont.
Engineer and Surveyor.

1. J. M. R. FAIRBAIRN, P.L.S., Westmount, Que.
Assistant Engineer, C.P.R.

4.*W. FINGLAND, 334 Portage Ave., Winnipeg, Man.
Architect and Structural Engineer.

1. C. FORRESTER Toronto, Ont.

1.*WALTER J. FRANCIS, C.E., M. Can. Soc. C.E., M. Am. Soc. C.E.
Montreal, Que.
Consulting Engineer, 28 Commercial Union Building.

3 *A. R. GOLDIE, Galt, Ont.
Manager, Goldie & McCulloch Co.

3. S. C HANLY, Midland, Ont.
Midland Engine Works Co.

4.*J. KEELE, B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.

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*Diploma with honours.

1893—*Continued*

1. J. T. Laidlaw, B.A.Sc., M.E., Cranbrook, B.C.
Consulting Mining Engineer.

3. F. L. Lash, Bandoeng, Java.
Manager, Electrical Supply Co., Board of Trade Building.

1. A. L. McAllister, B.A.Sc., 612 Continental Life Bldg., Toronto, Ont.
Consulting Engineer.

1. T. J. McFarlen, 80 Waverley Rd., Toronto, Ont.
Chemist.

1.*A. J. McPherson, B.A.Sc., D.L.S., Regina, Sask.
Superintendent of Highways, Province of Saskatchewan.

1. A. F. Macallum, B.A.Sc., C.E., Hamilton, Ont.
City Engineer.

1. W. T. Main, Wells St. Depot, Chicago, Ill.
Division Engineer, C. &. N. W. Ry.

1. V. G. Marani, Cleveland, Ohio.
City Building Inspector, City Hall.

1. W. Mines, B.A.Sc., Cleveland, Ohio.
With Brown Hoisting Co.

3.*J. M. Robertson, Montreal, P.Q.
Superintendent Repair and Testing Department, Montreal Light, Heat and Power Co.

1. R. Russell, Pembroke, Ont.
Railway Contractor.

1.*F. N. Speller, B.A. Sc., Pittsburgh, Pa.
Metallurgical Engineer, National Tube Co.

1. R. H. Squire, B.A. Sc., O.L.S (deceased).

1. W. V. Taylor, O.L.S., A.M.Can. Soc. C.E., Quebec, P.Q.
Quebec Harbour Commissioners.

1.*R. B. Watson, Regina, Sask.
Department of Public Works.

1894.

3.*R. W. Angus, B.A.Sc., Toronto, Ont.
Professor of Mechanical Engineering, University of Toronto.

1. H. F. Barker, Box 31, Halifax, N.S.

1. A. T. Beauregard, B.A.Sc., East Orange, N.J.
Laboratory Engineer, Public Service Corporation of New Jersey.

1. A. E. Bergey, Pittsburgh, Pa.
Carnegie Technical School.

3. D. G. Boyd, Toronto, Ont.
Draftsman, Public Works Department.

3. W. A. Bucke, Toronto, Ont.
District Manager, Canadian General Electric Co.

1. J. Chalmers, O.L.S., A. M. Can. Soc. C.E., Edmonton, Alta.
Structural Engineer, Department of Public Works.

4.*J. A. Ewart, B.A.Sc., 193 Sparks St., Ottawa, Ont.
Architect and Engineer.

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*Diploma with honours.

1894—*Continued.*

3. W. J. HERALD, B.A.Sc., Toronto, Ont.
Engineering Department, Canada Foundry Co.

3 H. E. JOB, B.A.Sc., Hamilton, Ont.
Manufacturer of Electrical Machinery and Apparatus.

3. A. C. JOHNSTON, B.A.Sc., M.E., Philadelphia, Pa.
Vice-President and Chief Engineer, The J. M. Dodge Company.

1. S. M. JOHNSTON, B.A.Sc., P.L.S., Greenwood, B C.
City Engineer.

1. J. E. JONES, Engineers' Club, New York, N.Y.

3. N. M. LASH, Montreal, P.Q.
Assistant Electrical Engineer, Bell Telephone Co.

1.*A. L. MCTAGGART, B.A.Sc., Rockefeller Bldg., Cleveland O.
Office of A. G. McKee, Consulting Engineer.

3.*W. MINTY, B.A.Sc., Blackburn, Eng.
With Messrs. Yates & Thom, Ltd., Engineers.

3. C. J. NICHOLSON, Hamilton, Ont.
Assistant Engineer, Hamilton, Guelph & Waterloo Ry.

1. H. ROLPH, Montreal, Que.
Secretary, John S. Metcalf Co., Ltd.

1. J. D. SHIELDS, B.A.Sc., Toronto, Ont.
Sewer Engineer, Staff of City Engineer.

1 ANGUS SMITH, O.L.S., A.M. Can. Soc. C.E., Regina, Sask.
City Engineer.

3. A. K. SPOTTON, Galt, Ont.
Chief Engineer, Goldie & McCulloch Engine Works.

3. R. T. WRIGHT, B.A.Sc., East Pittsburgh, Pa
Engineering Department, Westinghouse Machine Co.

1895.

1. J. ARMSTRONG, B.A.Sc., Quebec, Que.
District Engineer, G.T.P. Ry.

3. A. E. BLACKWOOD, 30 Church St., New York.
Manager New York Office, Sullivan Machinery Co.

1. E. J. BOSWELL, D.L.S., Winnipeg, Man.

3. G. BREBNER (deceased).

3. W. M. BRODIE, B.A.Sc., Pittsburgh, Pa.
With the Green Engineering Co. of Chicago.

3. L. L. BROWN, 115 Broadway, New York.
Superintendent, The Foundation Co.

4. R. J. CAMPBELL, Chicago. Ill.
Artist, Chicago Tribune.

3. A. W. CONNOR, B.A., C.E., 36 Toronto St., Toronto, Ont.
Bowman & Connor, Consulting Engineers.

1. J. S. DOBIE, B.A.Sc., O. & D.L.S., Thessalon, Ont.

1. F. W. GUERNSEY, Bankhead, Alta.
Assistant General Manager, Bankhead Mines, Ltd.

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*Diploma with honours.

1895.—*Continued.*

4.*A. H. HARKNESS, B.A.Sc., Toronto, Ont.
Structural Engineer, Confederation Life Building.

3. H. S. HULL, B.A.Sc., Johnstown, Pa.
Structural Drawing, Cambria Steel Co.

3.*J. McGOWAN, B.A., B.A.Sc., Toronto, Ont.
Associate Professor of Applied Mechanics, University of Toronto.

3. W. N. McKAY, Georgetown, Ont.
Manager, Bank of Hamilton.

3. H. L. McKINNON, B.A.Sc., Cleveland, Ohio.
Vice-President of The C. O. Bartlett & Snow Co.

1. W. W. MEADOWS, D. & O.L.S., Maple Creek, Sask.
Department of Public Works

1. F. J. ROBINSON, D. & O.L.S., Regina, Sask.
Deputy Minister of Public Works. Saskatchewan.

3. F. T. STOCKING, Toronto, Ont.
Hydro-Electric Commission.

3. R. C. C. TREMAINE, B.A.Sc. (Deceased).

1896.

2.*J. W. BAIN, B.A.Sc., Toronto, Ont.
Associate Professor of Applied Chemistry, University of Toronto.

2. L. T. BURWASH, Dawson, Y.T.
Mining Recorder.

3.*G. M. CAMPBELL, Riverside, Ill.
Superintendent, Power Apparatus Shops, Western Electric Co.

2. J. A. DECEW, B.A.Sc., 615 Canadian Express Bldg., Montreal, Que.
Consulting Chemical Engineer.

3.*H. P. ELLIOTT, B.A.Sc., E.E., Pittsburgh, Pa.
Electrical Engineer, Westinghouse Electric and Manufacturing Co.

3. W. C. GURNEY, Toronto, Ont.
Vice-President, Gurney Foundry Co., Ltd.

3.*H. V. HAIGHT, B.A.Sc., Sherbrooke, P.Q.
Chief Engineer, Canadian Rand Drill Co.

1. W. F. LAING, (deceased).

3. R.R. LAWRIE, (deceased).

3. C. MACBETH, B.A.Sc., (deceased).

3. J. A. MACMURCHY, Pittsburgh, Pa.
Chief Draftsman, Turbine Department, Westinghouse Machine Co.

1. T. MARTIN, B.A.Sc., Calgary, Alta.
Assistant Divisional Engineer, C.P.R., Western Division.

3. R. R. SCHEIBE, Toronto, Ont.
Sales Manager, Brigdens Ltd.

1897.

2. E. ANDREWS, B.Sc., A.M.I., C.E., Portmadoc, N. Wales.
Resident Engineer, Maenofferen Slate Quarry Co., Limited.

2.*J. A. BOW, Great Falls, Mont.
B. & M. Smelter.

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*Diploma with honours.

1897—*Continued.*

1. H. S. CARPENTER, B.A.Sc., O.L.S., Regina, Sask.
Superintendent of Highways, Department of Public Works.

5. H. W. CHARLTON, B.A.Sc., Ottawa, Ont.
Assistant Chemist at Experimental Farm.

4.*E. A. FORWARD, A.M. Can. Soc. C.E., Lockport, Man.
Engineer-in-charge, St. Andrew's Lock and Dam.

3.*A. T. GRAY, B.A.Sc., Schenectady, N.Y.
Designing Engineer on Steam Turbines, General Electric Co.

3. W. A. B. HICKS, Buffalo, N.Y.
With Lackawanna Steel Co.

4. C. F. KING, Toronto, Ont.
Rep. of Mortimer Co. of Ottawa.

1. H. W. PROUDFOOT, (deceased).

2.*A. H. A. ROBINSON, B.A.Sc., M.A.I., M.E., Haileybury, Ont.
Mine Inspector.

4. W. F. SCOTT, Toronto, Ont.
Structural Engineer and Consulting Architect.

3.*W. R. SMILEY, B.A.Sc., Cleveland, Ohio.
With Wellman-Seaver-Morgan Engineering Co.

2.*W.W. STULL, B.A.Sc., O.L.S., Sudbury, Ont.
Surveyor and Mining Engineer.

1.*M. B. WEEKES, B.A.Sc., D.L.S., Regina, Sask.
Department of Public Works.

1. E. A. WELDON, Winnipeg, Man.
Provincial Land Surveyor's Office.

1898.

1. W. H. BOYD, B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.

2. W. E. H. CARTER, B.A.Sc., Toronto, Ont.
Consulting Mining Engineer, 83 &85 Front Street, East.

3. E. H. DARLING, A.M. Can. Soc. C.E., Hamilton, Ont.
Assistant Engineer, Hamilton Bridge Works Co.

1. W. F. GRANT, B.A.Sc., Sault Ste. Marie, Ont.
City Engineer.

1. J. S. KORMANN. B.A.Sc., Toronto, Ont.
Manager, Kormann Brewing, Ltd.

3. J. E. LAVROCK, Vancouver, B.C.
Draftsman, Hermon & Burwell.

4. D. MACKINTOSH, B.A.Sc., B. Arch., New York, N.Y.
Chief Superintendent F. M. Andrews, & Co., Metropolitan Tower.

1. F.W. MCNAUGHTON, O.L.S., Winnipeg, Man.
Deputy Minister of Public Works.

1. J. H. SHAW, O.L.S., North Bay, Ont.
Surveyor and Engineer

3. A. E. SHIPLEY, B.A.Sc., Nelson, B.C.
Manager, Nelson Coke & Gas Co.

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*Diploma with honours.

1898—*Continued.*

3.*F. C. Smallpiece, B.A.Sc., Montreal, Que.
Assistant Manager, Canadian General Electric Co.

1. R. W. Smith, P.L.S., Revelstoke, B.C.
Surveyor.

1.*J. A. Stewart, M.A., Hamilton, Ont.
Engineer and Contractor, 67 Federal Life Building.

1.*H. L. Vercoe, Montreal, Que.
Chief Draftsman, Grand Trunk Pacific Ry.

3. T. A. Wilkinson, New York, N.Y.
Statistician, Westinghouse Church Kerr Co.

3. D. A. Williamson, B.A.Sc., Hamilton, Ont.
With Hamilton Bridge Works Co.

1899.

3.*T. Barber, Meaford, Ont.
Hydraulic Engineer, Chas. Barber & Sons.

2. J. T. M. Burnside, B.A.Sc. Montreal, Que.

3. L. B. Chubbuck, B.A.Sc., E.E., Hamilton, Ont.
Engineer, Canadian Westinghouse Co.

2. G. A. Clothier, Rossland, B.C.
Engineer, Le Roy Mining Co.

1. C. Cooper, Koekuk, Iowa.
Koekuk & Hamilton Water Power Co.

2. R. W. Coulthard, B.A.Sc., Blairmore, Alta.
General Manager, West Canadian Collieries, Ltd.

3. J. A. Craig, B.A.Sc., Toronto, Ont.
Office of Willis Chipman, C.E.

2. J. C. Elliott, Kelso, Ont.

3. W. E. Foreman, B.A.Sc., Pittsburgh, Pa.
Construction Dept., Westinghouse Electric and Mfg. Co.

3. E. Guy, B.A.Sc., Industry, Pa.
Engineering Dept., Westinghouse Electric and Mfg. Co.

3.*W. Almon Hare, B.A.Sc., A.M. Can. Soc. C.E., Toronto, Ont.
Secy-Treas. and Chief Engineer, The Standard Engineering Co.

1. R. Latham, B.A.Sc., Hamilton, Ont.
Chief Engineer, T. H. & B. Ry.

3. W. Monds, B.A.Sc., 36 Toronto St., Toronto, Ont.
Clark & Monds, Consulting Engineers.

1. J. Patterson, B.A., Toronto, Ont.
Physicist, Dominion Observatory.

3. A. S. H. Pope, B.A.Sc., Portland Oregon.
Pope & Wilcox, Electrical & Mechanical Engineers.

2.*G. E. Revell, B.A.Sc., Nelson, B.C.

3.*E. Richards, B.A.Sc., Toronto, Ont.
Assistant Electrical Engineer, City of Toronto.

3. G. A. Saunders, Wilkinsburg, Pa.
With Westinghouse Electric & Manufacturing Co.

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*Diploma with honours.

1899—*Continued.*

1.*T. SHANKS, B.A.Sc., D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.

1.*D. C. TENNANT, B.A.Sc., Lachine Locks, Que.
With Dominion Bridge Co.

3. W. W. VANEVERY, Sault Ste Marie, Ont.
Soo Corporation.

3. W. E. WAGNER, B.A.Sc., Toronto, Ont.
With Toronto Ferry Co.

2. G. H. WATT, D.L.S., Ottawa, Ont.
Dominion Land Surveyor.

3. E. YEATES, Hamilton, Ont.
Manager, London Machine Tool Co., Ltd.

1900.

1. J. L. ALLAN, A.M. Can. Soc., C.E., Halifax, N.S.
Office of Provincial Engineer.

2. E. G. R. ARDAGH, B.A.Sc., Toronto, Ont.
Lecturer in Applied Chemistry, University of Toronto.

3. J. A. BAIN, Ottawa, Ont.
Structural Engineer, Dept. of Public Works of Canada.

3. J. H. BARLEY, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.

2.*M. C. BOSWELL, M.A., Ph.D., Toronto, Ont.
Lecturer in Organic Chemistry, University of Toronto.

1. L. T. BRAY, D. & O.L.S., Edmonton, Alta.
District Engineer and Surveyor.

3. J. CLARK, Pittsburgh, Pa.
Electrician, P. & L. E. R. R.

2. J. E. DAVISON, B.A.Sc., Fort William.
Engineering Staff, Can. Northern Ry.

3. E. D. DICKINSON, Schenectady, N.Y.
With General Electric Co.

3. G. W. DICKSON, B.A.Sc., Toronto, Ont.
With Smith, Kerry & Chace.

2.*H.A.DIXON, B.A.Sc., M.L.S., Winnipeg, Man.
Division Engineer, Canadian Northern Railway.

2. C. H. FULLERTON, O.L.S., New Liskeard, Ont.
Engineer and Surveyor.

3. W. S. GUEST, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.

3. W. HEMPHILL. B.A.Sc., E.E., Buffalo, N. Y.
Superintendent, Cataract Power & Conduit Co.

3. S. E. M. HENDERSON, 560 Homewood Ave., Peterboro, Ont.
Designing Engineer, Canadian General Electric Co.

3. J. A. HENRY, Schenectady, N. Y.
Designing Engineer, General Electric Co.,

2. H. S. HOLCROFT, B. A.Sc., D.L.S.
Surveyor, Peace River District.

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*Diploma with honours.

1900—*Continued.*

3. H. A. JOHNSON, 148 Clinton St., Toronto, Ont.
Manager, Johnston Oil Engine Co., Limited.

3. J. C. JOHNSTON, Boston, Mass.
Plant Inspector, Warren Bituminous Paving Co.

2.*J. A. JOHNSTON, B.A.Sc., Ignace, Ont.
Contractor.

2. R. E. MCARTHUR, Montreal, Que.
Const. Dept., C.P.R.

2. J. G. MCMILLAN, B.A.Sc., 424 Wellington St. W., Toronto, Ont.
Mining Engineer, 75 Yonge St.

3. L. HAUN MILLER, Cleveland, Ohio.
Sales Agent, Bethlehem Steel Co.

2. E. V. NEELANDS, B.A.Sc., Cobalt, Ont.
Hargrave Mines.

1.*E. H. PHILLIPS, D.L.S., Saskatoon, Sask.
Phillips & Phillips, Civil Engineers and Surveyors.

2. J. R. ROAF, B.A.Sc., Michel, B.C.
Draftsman, Crow's Nest Pass Coal Co.

3.*C. H. E. ROUNTHWAITE, Winnipeg, Man.
Draftsman, G.T.P. Ry.

2. H. W. SAUNDERS, B.A.Sc., Gary, W. Va.
Division Engineer, U.S. Coal & Coke Co.

1. A. TAYLOR, D.L.S. & M.L.S., Portage La Prairie, Man.
Engineer and Surveyor.

1. W. C. TENNANT, B.A.Sc. (deceased).

2. S. M. THORNE, B.A.Sc., Cobalt, Ont.
Engineering Staff, Silver Leaf Mine.

1. F. W. THOROLD, B.A.Sc., Toronto, Ont.
Assistant City Engineer on Const. of Sewage System.

1. H. M. WEIR, B.A.Sc., Pachuca, Mex.
With Real Del Morte Co.

3. F. D. WITHROW, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.

1901.

1. R. H. BARRETT, B.A.Sc., O.L.S. (deceased).

3. W. G. BEATTY, Fergus, Ont.
Manager, Beatty Bros., Implement Manufacturers.

3. G. M. BERTRAM, Joplin, Mo.
Representative of the Sullivan Machinery Co.

3. W. J. BOWERS (deceased).

3. E. T. J. BRANDON, B.A.Sc., Toronto, Ont.
Assistant Engineer Hydro-Electric Power Comm.

3. W. P. BRERETON, B.A.Sc., Winnipeg, Man.
Assistant Engineer, Power Construction Dept.

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*Diploma with honours.

1901—*Continued.*

3. J. T. Broughton, Scottdale, Pa.
Chief Engineer, Scottdale Foundry & Machine Co.

3.*W. G. Chace, B.A.Sc., Carnegie Library, Winnipeg, Man.
Firm of Smith, Kerry & Chace.

3. A. G. Christie, 1713 Munro St., Madison, Wis.
Professor of Steam Engineering, University of Wisconsin.

3. J. R. Cockburn, B.A.Sc., A. M. Can. Soc. C.E. Toronto, Ont.
Lecturer in Descriptive Geometry, University of Toronto.

1. W. A. Duff, Ottawa, Ont.
Assistant Bridge Engineer, Transcontinental Ry.

2.*D. E. Eason, B.A.Sc., Peterboro', Ont.
Division Engineer, Trent Valley Canal.

1.*S. Gagne, B.A.Sc (deceased).

3. N. R. Gibson, B.A.Sc., Winnipeg, Man.
Assistant Engineer, Power Const. Dept.

2. A. T. E. Hamer, Wahnapitae, Ont.
Engineering Staff, Canadian Northern Ry. Co.

1. C. Harvey, B.A.Sc., D.L.S., Kelowna, B.C.
Consulting Engineer and Surveyor.

2. F. C. Jackson, La Tuque, Que.
Jackson & Connelly, Contractors, N.T.C. Ry.

3.*A. Laidlaw, Kansas, City, Mo.
District Manager, Trussed Concrete Steel Co.

3. W. C. Lumbers, Calgary, Alta.
Engineering Staff, C.P.R.

3. A. C. Macdougall, Massena, N.Y.
Asst. Superintendent, Aluminium Co. of America.

3. A. T. C. McMaster, B.A.Sc., Copper Cliff,
Engineer on Design & Construction, The Canadian Copper Co.

1. G. MacMillan, Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.

3.*H. G. McVean, B.A.Sc., Moose Jaw, Sask.
Contractor and Engineer.

2. W. C. Matheson, Joliette, Que.
With McKenzie Mann. Co.

3. H. T. Middleton, Englewood Cliffs, N.J.

2. J. L. R. Parsons, B.A., D.L.S., Winnipeg, Man.
Engineer and Surveyor.

1. G. H. Power, North Battleford, Sask.
Western Canada Rep. of Willis Chipman, C.E.

3.*H. W. Price, B.A.Sc., Toronto, Cnt.
Lecturer in Electrical Engineering, University of Toronto.

1. H. P .Rust, B.A.Sc., A.M.Can. Soc., C.E., New York, N.Y.
With Messrs. Viele, Blackwell & Buck.

3. M. V. Sauer, B.A.Sc., Niagara Falls, Ont.
Assistant Engineer, Ontario Power Co.

3. W. H. Stevenson, B.A.Sc., Monadnock Block, Chicago, Ill.
Secretary Power Plant Specialty Co.

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*Diploma with honours.

1901—*Continued.*

1. R. D. WILLSON, Winnipeg, Man.
Assistant City Engineer.

1902.

3.*H. G. BARBER, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.

1. W. J. BLAIR, B.A.Sc., D. & O.L.S., New Liskeard, Ont.
Civil Engineer and Surveyor.

3. J. M. BROWN, Pittsburgh, Pa.
With Westinghouse Machine Co., Steam Turbine Dept.

2. W. G. CAMPBELL, Toronto, Ont.

2. A. R. CAMPBELL, Toronto, Ont.
Universal Mfg. Co., Ltd., St. James Chambers.

3. C. G. Carmichael (deceased).

2.*W. CHRISTIE, B.A.Sc., Prince Albert, Sask.
Dominion Land Surveyor.

2. F. T. CONLON, Thorold, Ont.
Welland Canal Engineering Staff.

3. H. V. CONNOR, Pittsburgh, Pa.
With Westinghouse Electric and Mfg. Co.

2.*M. T. CULBERT, deceased.

2. R.CUMMING, Toronto, Ont.
General Contractor. 50 Front St. E.

1. W. E. DOUGLAS, B.A., Toronto, Ont.
Contractor, 152 Bay St.

3.*R. J. DUNLOP, Toronto, Ont.
With Canadian Westinghouse Co.

2. W. M. EDWARDS, B.A.Sc., 1510 5th St. West, Calgary, Alta.
With Smith, Kerry & Chace.

3. W. ELWELL (deceased).

2. J. M. EMPEY, B.A.Sc.,O.L.S.,D.L.S., Calgary, Alta,
District Engineer and Surveyor, Dept. of Public Works.

2.*D. L. H. FORBES, Yzabal, Sonora, Mex.
Metallurgical Engineer El Tigre Mining Co.

1.*A. E. GIBSON, B.A.Sc., Toronto, Ont.
Office of Haney & Miller, Engineers and Contractors.

3. A. C. GOODWIN, Pittsburgh, Pa.
Draftsman, Aluminium Co. of America.

3. C. P. HENWOOD, McKeesport, Pa.
Draftsman, National Tube Co.

3. D. M. JOHNSTON, London, Ont.
Inspector, London Sub-station, Hydro-Electric Power Comm.

2. R. H. KNIGHT, B.A.Sc.,D.L.S., Edmonton, Alta.
Driscoll & Knight, Engineers and Surveyors.

5.*F. L. LANGMUIR, B.A.Sc.,Ph.D., Toronto, Ont.
Chemist, M. Langmuir Mfg. Co.

3. A. H. McBRIDE, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Commission.

---

*Diploma with honours.

1902—*Continued.*

1. A. L. McLENNAN, D.L.S., Toronto, Ont.
Office of York Co. Engineer.

3. J. T. MACKAY, Toronto, Ont.
Student in Faculty of Medicine, University of Toronto.

3. J. F. S. MADDEN, Winnipeg, Man.
Erecting Engineering Dept., Can. Gen. Electric Co.

3.*C. H. MARRS, Pittsburgh, Pa.
Designing Engineer, Riter-Conley Mfg. Co.

3. P. MATHISON, B.A.Sc., Hamilton, Ont.
Electrical Eng.. Canadian Westinghouse Co.

3. R. S. MENNIE, Pittsburgh, Pa.
With Crucible Steel Co. of America.

2. H. H. MOORE, D.L.S.,A.M. Can. Soc. C.E., Calgary, Alta.
Dominion Land Surveyor and Engineer.

1.*T. S. NASH, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.

1. G. G. POWELL, B.A.Sc., Toronto, Ont.
Asst. City Engineer, Roadways Dept.

1.*W. F. RATZ, D.L.S. (deceased).

3. H. D. ROBERTSON, B.A.Sc., Toronto, Ont.
Miller, Cumming & Robertson, Engineers and Contractors.

3.*D. SINCLAIR, B.A.Sc. (deceased).

2.*I. J. STEELE, D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.

3. W. H. SUTHERLAND, B.A.Sc., 107 St. James St., Montreal, Que.
Assistant Engineer, Montreal Water and Power Co.

3.*T. F. TAYLOR, 494 Concord Ave., Toronto, Ont.

2.*C. M. TEASDALE, Concord, Ont.
Surveyor.

3. A. A. WANLESS, Sydney Mines, N.S.
Lecturer, Sydney Mines Technical Schools.

3. H. J. ZAHN, B.A.Sc., 235 Calumet St., Detroit, Mich.

1903.

3. H. G. ACRES, Toronto, Ont.
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1. J. G. R. ALISON, Pittsburgh, Pa.
With Riter-Conley Mfg. Co.

3.*H. H. ANGUS, B.A.Sc., Bethlehem, Pa.
Draftsman, Bethlehem Steel Co.

3. J. A. BEATTY, Peterboro', Ont.
Morrow & Beatty, Contractors.

3.*J. BRESLOVE, East Pittsburgh, Pa.
Steam Turbine Engineer, Westinghouse Machine Co.

2. J. H. BURD, O.L.S., Sudbury, Ont.
Engineer and Surveyor.

---

*Diploma with honours.

1903—*Continued.*

1.*E. L. BURGESS, D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.

2. N. A. BURWASH, B.A.Sc., Whitehorse, Y.T.
Surveyor.

1. F. F. CLARKE, D. & O.L.S. A.M. Can. Soc. C.E., Toronto, Ont.
Divisional Engineer, Can. Northern Ry.

2. C. L. COULSON, Welland, Ont.

3.*A. E. DAVISON, B.A.Sc., Toronto, Ont.
Engineering Staff, Hydro-Electric Power Commisssion.

3. C. J. FENSOM, B.A.Sc., M.E., Toronto, Ont.
Consulting Mechanical Engineer, 43 Victoria St.

2.*E. O. FUCE, O.L.S., Galt, Ont.
Consulting Civil Engineer.

3*.F. A. GABY, B.A.Sc., Toronto, Ont.
Assistant Chief Engineer, Hydro-Electric Power Commission.

1. J. C. GARDNER, B.A.Sc., Niagara Falls, Ont.
City Engineer.

3. R. E. GEORGE, Dover, N.H.
Electrical and Gas Engineer, The United Gas & Electric Co.

1.*P. GILLESPIE. B.A.Sc., Toronto, Ont.
Lecturer in Theory of Construction, University of Toronto.

1. W. A. GOURLAY, Toronto, Ont.
Engineering Staff, C.P.R.

2. J. F. HAMILTON, B.A.Sc., C.E., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.

2. G. S. HANES, B.A.Sc, O.L.S. North Vancouver, B.C.
City Engineer.

2. F. Y. HARCOURT. B.A., Port Arthur, Ont.
Engineer, Public Works Dept.

1. L. J. HAYES, Chicago, Ill.
Structural Engineer, Corn Products Refining Co.

1.*F. D. HENDERSON, Sec'y. Board of Examiners for D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.

5.*J. A. HORTON, New Ontario.

3. J. G. JACKSON, Toronto Ont.
Electrical Department, City Hall.

3. C. K. JOHNSTON, Pefferlaw, Ont.
Merchant.

1. H. JOHNSTON, O.L.S., Berlin, Ont.
Davis & Johnston, Civil Engineers and Surveyors.

3. A. G. LANG, Toronto, Ont.
Underground Superintendent, Toronto Hydro-Electric System.

1.*A. J. LATORNELL, B.A.Sc., Edmonton, Alta.
City Engineer.

1.*H. J. MCAUSLAN, B.A.Sc., O.L.S., North Bay, Ont.
Staff of T. & N.O. Ry.

3. J. A. MCFARLANE. B.A.Sc., Hamilton. Ont.
Chief Draftsman, Hamilton Bridge Works Co.

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*Diploma with honours.

1903—*Continued.*

1.*A. L. McNaughton, *With G.P.T. Co.*	Prince Rupert, B. C.
5.*F. G. Marriott, B.A.Sc., *Chemist and Supt. Asphalt Plant, City Testing Laboratory.*	Toronto, Ont.
3.*C. A. Maus,	Paris, Ont.
3.*M. L. Miller, *Draftsman, McClintic-Marshall Construction Co.*	Pittsburg, Pa.
3. P. H. Mitchell, *Consulting Electrical Engineer, Trader's Bank Building.*	Toronto, Ont.
2.*R. H. Montgomery, B.A.Sc., O. and D.L.S., *Engineer and Surveyor.*	Prince Albert, Sask.
1. F. A. Moore, *Engineering Dept., C. N. Ry.*	Winnipeg, Man.
3. E. E. Mullins, *Supt. Motive Power, Northern Ry. Co.*	Limon, Costa Rica.
3. I. H. Nevitt, B.A.Sc., *Construction Bell Telephone Co.*	Toronto, Ont.
1. E. W. Oliver, B.A.Sc., C.E., *Assistant Chief Engineer, Canadian Northern Ry. System.*	Toronto, Ont.
3. J. P. Oliver, *Supt. of Construction, The American Sugar Refining Co.*	Arabi, La.
3. J. D. Pace, B.A.Sc., *Construction Engineer, Canadian Westinghouse Co.*	Montreal, Que.
3. B. B. Patten, B.A.Sc., *Rutherford & Patten, Engineers and Surveyors.*	St. Catharines, Ont.
2. D. H. Philp, *Georgian Bay Canal Survey.*	Ottawa, Ont.
3.*D. H. Pinkney, *National Tube Dept., U.S. Steel Corporation.*	Elyria, O.
2. T. H. Plunkett, B.A.Sc.,	Toronto, Ont.
1. D. F. Robertson, D.L.S.,	Ottawa, Ont.
3.*H. M. Schiebe, B.A.Sc., *Engineer, Westinghouse Electric & Mfg. Co.*	East Pittsburgh, Pa,
1.*H. L. Seymour, *Sanders & Seymour, Civil Engineers and Dominion Land Surveyors.*	Edmonton, Alta.
1. J. H. Smith, D. & O.L.S., *Engineer and Surveyor, 140 Jasper Ave.W.*	Edmonton, Alta.
3. H. G. Smith, B.A.Sc., (deceased).	
3. S. L. Trees, B.A.Sc., *Supt. Mfg. Dept., Samuel Trees & Co., 42 Wellington St. East.*	Toronto, Ont.
2. J. E. Umbach, *Topographical Surveys Branch, Department of the Interior.*	Ottawa, Ont.
1. J. Waldron, D.L.S., *Engineer and Surveyor.*	Moose Jaw, Sask.
3.*S. B. Wass, *Chief Engineer, Amostook Valley Railroad.*	Presque Isle, Me.
3. J. A. Whelihan,	Regina, Sask.

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*Diploma with honours.

1903—*Continued.*

3. H. F. WHITE, London, Ont.
Assistant Superintendent, The Geo. White & Sons Co., Ltd.
2.*C. G. WILLIAMS, B.A.Sc., Elk Lake, Ont.
Superintendent, Otisse Mining Co.
1.*N. D. WILSON, B.A.Sc., Lumsden Bldg., Toronto.
Engineer and Surveyor.
1.*C. R. YOUNG, B.A.Sc., A.M. Can. Soc. C.E., Toronto, Ont.
Lecturer in Structural Engineering, University of Toronto.

1904.

3.*J. H. ALEXANDER, B.A., St. Louis, Mo.
Engineer, Hunkins-Willis L. & C. Co.
3.*J. H. BARRETT, Toronto, Ont.
With the Wm. Davies Co., Ltd.
3. M. B. BONNELL, Bobcaygeon, Ont.
3. T. D. BROWN, B.A.Sc., Calgary, Alta.
Canadian Fairbanks Co.
3. F. W. BURNHAM, B.A.Sc., Milwaukee, Wis.
Steam & Electrical Department, Allis-Chalmers-Bullock Co.
3. J. W. CALDER, B.A.Sc., Fort William, Ont.
With Hydro-Electric Commission.
1. N. C. CAMERON, 4172 Dorchester St., Montreal, Que.
Dominion Engineering and Construction Co.
1. A. J. CAMPBELL, B.A.Sc., Toronto, Ont.
3.*A. M. CAMPBELL, B.A.Sc., 1403 King St. W., Toronto, Ont.
4. J. B. CHALLIES, Ottawa, Ont.
Hydraulic Engineer, Department of the Interior.
2. C. A. CHILVER Walkerton, Ont.
2. H. L. CHILVER, Moosehorn Bay, Man.
1. U. W. CHRISTIE, B.A.Sc., O.L.S., Ottawa, Ont.
Astronomical Surveys Branch, Dept. of the Interior.
2. P. C. COATES, B.A.Sc., Cobalt, Ont.
Mining Engineer.
1. S. B. CODE, Smith's Falls, Ont.
Town Engineer.
1.*T. F. CODE, B.A.Sc (deceased).
1.*W. A. COWAN, Farnham, Que.
Resident Engineer, C.P.R.
3.*S. E. CRAIG, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*S. R. CRERAR, B.A.Sc., O.L.S., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
3. W. M. CURRIE, Hamilton, Ont.
Managing Director, Canada Steel Co. Ltd.
3. H. H. DEPEW, Fernie, B.C.
Supt., Crow's Nest Pass Electric Light and Power Co.

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*Diploma with honours.

1904—*Continued.*

2. A. J. Elder, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
2. J. G. Fleck, Vancouver, B.C.
Fleck Bros. Ltd.
1.*A. L. Ford, B.A.Sc., Prince Rupert, B.C.
Government Inspector on G.T.P. Ry.
3. W. S. Gibson, B.A.Sc., 38 Park Rd., Toronto, Ont.
1. J. N. Goodall, 19 Gladstone Apts., Toronto, Ont.
Engineer, Niagara and Ontario Construction Co.
1. J. P. Gordon, Toronto, Ont.
Engineering Staff, Willis Chipman, C.E.
3. W. W. Gray, B.A.Sc., Toronto, Ont.
Lecturer in Mechanical Engineering, University of Toronto.
1. A. Gray, B.A.Sc., Port Credit, Ont.
With St. Lawrence Starch Co.,
3. W. K. Greenwood, B.A.Sc., Orillia, Ont.
Town Engineer.
1. L. D. Hara, St. Catharines, Ont.
Assistant Engineer, Welland Canal Co.
3. C. J. Harris, B.A.Sc., Brantford, Ont.
With Brantford Screw Co.
1. J. B. Heron, B.A.Sc., Toronto, Ont.
c. o. *S. H. Sykes, 1577 Danforth Ave.*
1. E. M. M. Hill, Winnipeg, Man.
Engineering Dept., Canadian Northern Railway.
2. S. N. Hill, 325, Waverly St., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
2. C. J. Ingles, Niagara Falls, Ont.
With Ontario Power Co.
1. E. A. James, B.A.Sc., Toronto, Ont.
Managing Editor, Canadian Engineer.
1. P. V. Jermyn, B. A.Sc., 118 King St. West, Toronto, Ont.
C.P.R. Construction Department.
3. W. S. H. Keefe, Fort Covington, N.Y.
Manager, Light, Heat and Power Co.
3. W. J. Larkworthy (deceased).
3. O. B. McCuaig, B.A.Sc., Wenatchee, Wash.
Supt. ,Entiat Light and Power Co.
1. G. G. McEwen, B.A.Sc., Winchester, Ont.
Office of T. H. Dunn, O.L.S.
1.*W. G. McFarlane, B.A.,B.A.Sc.,
Engineer and Surveyor, Peace River Dist.
3.*C. P. McGibbon, B.A., East Pittsburgh, Pa.
With Westinghouse Electric and Mfg. Co.
3. C. McKay, B.A.Sc., (deceased).
1. D. McMillan, Woodville, Ont
3. G. J. Manson, Thorold, Ont.
With Manson Mfg. Co., Ltd.

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*Diploma with honours.

1904—*Continued.*

1.*W. N. MOORHOUSE, Toronto, Ont.
Office of Sproatt & Rolph, Architects.

3. E. E. MOORE, Glen Falls, N.Y.
Engineer, Inter-State Iron Co.

3. W. H. MUNRO, Ottawa, Ont.
Assistant to J. B. McRae.

3. G. PACE, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.

3. W. S. PARDOE, B.A.Sc., Philadelphia, Pa.
Instructor in Hydraulics, University of Pennsylvania.

3. J. PARIS, La Tuque, Que.
Resident Engineer, Trans. Ry.

2. J. PARKE, B.A.Sc., Havilah, Ont.
Chemist and Assayer.

3. W. J. PARKER, Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.

3.*A. E. PICKERING, Sault Ste. Marie, Ont.
Supt., Lake Superior Power Co.

1. D. L. C. RAYMOND, B.A.Sc., Toronto, Ont.
Manager, The Concrete Engineering and Construction Co., Ltd.

1. F. B. REID, B.A.Sc., Ottawa, Ont.
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3.*M. R. RIDDELL, B.A.Sc., Toronto, Ont.

3. G. S. ROXBURGH, B.A.Sc., Winnipeg, Man.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.

2. F. N. RUTHERFORD, B.A.Sc., St. Catharines, Ont.
Rutherford and Patten, Surveyors and Engineers.

1.*J. D. SHEPLY, B.A.Sc., D.L.S., N. Battleford, Sask.
District Surveyor and Engineer.

3. F. W. SLATER, B.A.Sc., Schenectady, N.Y.
With General Electric Co.

3.*R. S. SMART, Ottawa, Ont.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.

1. D. A. SMITH, B.A.Sc., Claude, Ont.

3. W. J. SMITHER, B.A.Sc., 50 St. Clair Ave., Toronto, Ont.

3. S.E. THOMSON, B.A.Sc., Niagara Falls, Ont.
Engineering Staff, Electrical Development Co.

3. C. J. TOWNSEND, B.A.Sc., Toronto, Ont.

1. D. T. TOWNSEND, B.A.Sc., O.L.S., Winnipeg, Man.
C.P.R. Land Department.

1. A. V. TRIMBLE, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.

3. B. B. TUCKER, B.A.Sc., Morrisburg, Ont
Resident Engineer, New York and Ontario Power Co.

2.*E. WADE, B.A., Welland, Ont.
Teacher.

1.*E. W. WALKER, B.A.Sc., (deceased).

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*Diploma with honours.

1904—*Continued.*

3. J. P. WATSON, B.A.Sc., Montreal, Que.
Draftsman, Motive Power Dept., C.P.Ry.

1. J. M. WEIR, Hamilton, Ont.
Engineering Staff, G.T. Ry.

1.*A. F. WELLS, O.L.S.,B.A.Sc., Toronto, Ont.
Wells & Gray, Ltd., Engineers and Contractors.

1. W. R. WORTHINGTON, B.A.Sc., Toronto, Ont.
Assistant Sewer Engineer, Staff of City Engineer.

3. W. F. WRIGHT, Toronto, Ont.
Sales Dept., Canadian General Electric Co.

1905.

2. H. W. ARENS, (deceased).

3. R. H. ARMOUR, 165 Broadway, New York.
Westinghouse Electric & Manufacturing Co.

3.*C. B. AYLESWORTH, Hamilton, Ont.
Draftsman, Canadian Westinghouse Co.

1.*W. BARBER, B.A.Sc., Toronto, Ont.
Roadways Department, City Hall.

2.*W. A. BEGG, B.A.Sc., Regina, Sask.
Department of Public Works.

3.*G. G. BELL, Walkerville, Ont.
Canadian Bridge Co.

1. J. C. BOECKH, Toronto, Ont.
With Boeckh Brush Co.

3. W. M. BRISTOL, Halifax, N.S.
Canadian Westinghouse Co.

2. W. C. CAMPBELL, Keene, Ont.
Mining Engineer.

3. W. R. CARSON, High Bridge, N.J.
Construction Engineer, Taylor Iron and Steel Co.

1. A. V. CHASE, Orillia, Ont.

3. S. R. A. CLEMENT, Toronto, Ont.
With Hydro-Electric Power Commission.

3. T. E. CORRIGAN, Bodie, Cal.
Chief Electrician, Standard Consolidated Mining Co.

1.*N. L. R. CROSBY, B.A.Sc., Chicago, Ill.
Assistant Contracting Engineer, McClintic-Marshall Const. Co.

1. G. H. FERGUSON, B.A.Sc., Toronto, Ont.
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3. H. S. FIERHELLER, B.A.Sc. (deceased).

3. F. W. HARRISON, 360 Pearl St., Brooklyn, N.Y.
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1. M. C. HENDRY, B.A.Sc., Toronto, Ont.

2. C. S. L. HERTZBERG, Walkerville, Ont.
Trussed Concrete Steel Co.

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*Diploma with honours.

1905—*Continued.*

3. W. G. Hewson, B.A.Sc., Toronto, Ont.
With Smith, Kerry and Chace.

1. G. S. Jones, Smith's Falls, Ont.

3.*G. Kribs, Toronto, Ont.
With Smith, Kerry and Chace.

2. P. A. Laing, Fanquier, Ont.
Resident Engineer, T.C. Ry.

1. A. Latornell, B.A.Sc., Toronto, Ont.
Sewer Department, City Hall.

3. J. W. Leighton, Toronto, Ont.
Secretary, Evan Rotary Engine Co.

1.*T. R. Loudon, B.A.Sc., Toronto, Ont.
Lecturer in Metallurgy, University of Toronto.

3. S. E. McGorman, Walkerville, Ont.
Draftsman, Canadian Bridge Co.

1.*W. W. McGregor (deceased).

2. D. W. McKenzie, Winnipeg, Man.
Draftsman, Engineering Dept., C.N. Ry.

3.*C. A. McLean, Toronto, Ont.
Canadian Westinghouse Co.

2. W. N. McLean, Erin, Ont.

3. F. G. Mace, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.

3. R. W. Moffatt, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.

3. L. W. Morden, Toronto, Ont.
Canadian Westinghouse Co.

3. G. R. Munro, B.A.Sc., Peterboro', Ont.
With Hudson Bay Survey.

3.*W. G. Nicklin, B.A.Sc., Front & Tetellier Sts., Grand Rapids, Mich.
Assistant Superintendent, Dalnu & Kiefer Tanning Co.

1. E. D. O'Brien, Nipigon, Ont.
With Transcontinental Ry.

1.*B. B. Patten, B.A.Sc., St. Catharines, Ont.
Rutherford and Patten, Surveyors and Engineers.

1. E. P. A. Phillips, B.A.Sc., O.L.S., Porcupine, Ont.
Pierce & Phillips, Engineers & Surveyors.

1. W. B. Porte, Oakville, Ont.

2. E. F. Pullen, Cochrane, Ont.
Resident Engineer, Transcontinental R.R.

2. G. L. Ramsey, B.A.Sc., Dunnville, Ont.

1. G. W. Rayner, Thorold, Ont.

3.*R. B. Ross, (deceased).

5. T. E. Rothwell, B.A.Sc., Belleville, Ont.
Provincial Assay Office.

2.*G. S. Scott, Toronto, Ont.
Fellow in Mineralogy, University of Toronto.

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*Diploma with honours.

1905—*Continued.*

3. H. V. SERSON, Highbridge, N.J.
Engineer in charge, Power House Const., Taylor Iron & Steel Co.

3. C. H. SHIRRIFF, B.A.Sc., Toronto, Ont.
Chemist, Imperial Extract Company.

3.*C. E. SISSON, Peterboro', Ont.
Engineering Department, Canadian Gen. Electric Co.

1. D. L. N. STEWART, B.A.Sc., Collingwood, Ont.

1. M. A. STEWART, Toronto, Ont.
Assistant City Engineer, Roadway Dept., City Hall.

3.*W. F. STUBBS, Galt, Ont.
Assistant Engineer, Goldie & McCulloch Co.

1. N. H. STURDY, Cleveland, Ohio.
Designer, L, S. & M. S. Ry.

1. W. G. SWAN, B.A.Sc., Langley, B.C.
Divisional Engineer, C. N. Ry.

1.*F. H. SYKES, O.L.S., D.L.S., Toronto, Ont.
Asst. Structural Engineer, with City Architect, City Hall.

3. L. R. THOMSON, B.A.Sc., Winnipeg, Man.
Lecturer in Civil Engineering, University of Manitoba.

3. E. D. TILLSON, B.A.Sc., New York, N.Y.
Engineer for Const. Dept., Safety Insulated Wire & Cable Co.

1.*J. J. TRAILL, B.A.Sc., Toronto, Ont.
Lecturer in Mechanical Engineering, University of Toronto.

1.*W. M. TREADGOLD, B.A., Toronto, Ont.
Lecturer in Surveying, University of Toronto.

3. W. E. TURNER, B.A.Sc., Salt Lake City, Utah.
With Utah Light & Ry. Co.

3. A. E. UREN, Toronto, Ont.
Editor, Acton Publishing Co.

3. J. M. VAUGHAN, 58 Melville Ave., Toronto, Ont.
Contractor.

1. H. L. WAGNER, B.A.Sc., Hamilton, Ont.
Draftsman, Hamilton Bridge Works Co.

2. W. H. YOUNG, B.A.S c.,D.L.S., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.

1906.

1. F. ALPORT, Superior Junct., Ont.
Resident Engineer, Transcontinental Ry.

3.*W. L. AMOS, Guelph, Ont.

1. A. H. ARENS, Inverness, N.S.
Resident Engineer, Inverness Ry. & Coal Co.

3.*J. C. ARMER, B.A.Sc., Toronto, Ont.
Secretary and Managing Editor of the Canadian Manufacturer Pub. Co. Ltd.

1. M. H. BAKER, B.A.Sc., St. Thomas, Ont.
Assistant City Engineer.

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*Diploma with honours.

1906—*Continued.*

3. F. W. Baldwin, Baddeck, N.S.
With Graham Bell, Esq.
2. E. W. Banting, B. A.Sc., Toronto, Ont.
Demonstrator in Surveying, University of Toronto.
3. F. Barber, B.A., Toronto, Ont.
York County Engineer, 57 Adelaide St. E.
2. M. Bates, B.A.Sc (deceased).
2. J. P. Bellisle, (deceased).
3.*H. H. Betts, B.A.Sc., Rio de Janiero, Brazil.
Rio de Janiero Tramway, Light & Power Co.
5.*D. E. Beynon, B.A.Sc., Toronto, Ont.
With Dunlop Rubber Goods Co.
2. G. W. Bissett, Naughton, Ont.
Mill Supt., Canadian Exploration Co., Ltd.
3. W. C. Blackwood, B.A.Sc., Toronto, Ont.
Demonstrator in Physics, University of Toronto.
3. H. E. Brandon, B.A.Sc., Winnipeg, Man.
Chief Engineer, Vulcan Iron Works.
1. M. E. Brian, B.A.Sc., O.L.S., A.M. Can. Soc. C.E., Windsor, Ont.
City Engineer.
2. T. W. Brown, B.A.Sc., D. & S.L.S., Saskatoon, Sask.
Civil Engineer.
1.*A. E. K. Bunnell, B.A.Sc., Weyburn, Sask.
Engineering Staff, Willis Chipman, C.E.
3. F. M. Byam, Toronto, Ont.
With Smith, Kerry, and Chace.
3. A. Cameron, Toronto, Ont.
Draftsman, Canada Foundry Co.
3. A. W. Campbell, B.A.Sc., Toronto, Ont.
Inspector, Hydro-Electric Power Commission.
1. M. J. Carroll, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
3.*R. E. C. Chadwick, Toronto, Ont.
Staff of City Engineer.
1.*G. T. Clark, B.A., Saskatoon, Sask.
City Engineer.
3.*G. A. Colhoun, Hamilton, Ont.
Draftsman, The Hamilton Bridge Works Co., Ltd.
1.*W. A. M. Cook, B.A.Sc., Toronto, Ont.
Staff of City Architect, City Hall.
1.*E. L. Cousins, B.A.Sc., Toronto, Ont.
Resident Engineer, G. T. Ry., Middle and Southern Div.
4. A. G. Creighton, Prince Albert, Sask.
Creighton & McConnell, Architects and Structural Engineers.
4. W. N. Daniels, 1215 Filbert St., Philadelphia, Pa.
With John R. Wiggins & Co.
3.*N. P. F. Death, B.A.Sc., 25 Jarvis St., Toronto, Ont.
Death & Watson, Electrical Engineers and Contractors.

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*Diploma with honours.

1906—*Continued.*

3. C. S. Dundass, B.A.Sc. Lachine, Que.
With Dominion Bridge Co.
3. S. L. Fear, Amherstburg, Ont.
With Dunbar, Sullivan Dredging Co.
5.*C. C. Forward, Ottawa, Ont.
Laboratory of the Inland Revenue Department.
5. C. W. Graham, B.A.Sc., Toronto, Ont.
Industrial Chemist, Wm. Davies Co.
1.*P. W. Greene. C/o F. H. Kortright; St. Kitts B.W.I.
3. C. B. Hamilton, B.A.Sc., 43 Madison Ave., Toronto, Ont.
Hamilton Gear and Machinery Co.
1.*A. L. Harkness, B.A.Sc., Lachine Locks, Que.
With Dominion Bridge Co., Ltd.
1.*R. L. Harrison, Cobourg, Ont.
Resident Engineer, Canadian Northern Ry.
1. E. Harrison, B.A.Sc., New Liskeard, Ont.
With Sutcliffe & Neelands.
3. J. C. Hartney, B.A.Sc., Vancouver, B.C.
Engineer & Salesman, Canadian Westinghouse Co.
1. S. Hett, B.A.Sc., Sutton West, Ont.
Surveyor.
3. C. R. Hillis, Toronto, Ont.
With Toronto & Niagara Power Co.
3. C. W. Hookway, B.A.Sc., Winnipeg, Man.
Allis-Chalmers Bullock Co.
3. R. H. Hopkins, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
1.*R. S. Houston, Emerson, Man.
2.*W. Huber, Toronto, Ont.
With Canadian Inspection Co.
3.*A. H. Hull, B.A.Sc., Toronto, Ont.
With Smith, Kerry and Chace.
3. W. C. Jepson, Niagara Falls, Ont.
Welland Canal Office.
1.*C. Johnston, B.A.Sc., Toronto, Ont.
District Engineer, Can. Northern Ry.
1. G. R. Jones, B.A.Sc., China.
Missionary.
3. T. Jones, B.A.Sc., 18 Meredith Crescent, Toronto, Ont.
1.*A. E. Jupp, B.A.Sc., Haileybury, Ont.
3. J. D. Keppy, Toronto, Ont.
Canadian Inspection Co.
1. J. L. Lang, B.A.Sc., D. & O.L.S., Sault Ste. Marie, Ont.
Lang & Keys, Engineers and Surveyors.
3. A. P. Linton, B.A.Sc., Montreal Que.
With Dominion Bridge Co.

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*Diploma with honours.

1906—*Continued.*

4.*A. Wellesley McConnell, B.A.Sc., *Lecturer in Architecture, University of Toronto.*	Toronto, Ont.
3.*D. G. McIlwraith, *Draftsman, The Goldie & McCulloch Co., Ltd.*	Galt, Ont.
2. J. A. McKenzie, *Manager, Nipissing Reduction Co.*	Cobalt, Ont.
1.*J. V. McNab, *Transitman, C.PR. Engineering Staff.*	Kenora, Ont.
3. J. A. McPherson, *Student, Faculty of Medicine, University of Toronto.*	Toronto, Ont.
2. K. A. MacKenize, B.A.Sc., *Managing Editor, "Builder & Contractor."*	Toronto, Ont.
1. W. MacKinnon, *Erection Dept., McClintic Marshall Construction Co.*	Rankin, Pa.
3.*W. Maclachlan, B.A.Sc., *Trenton Electric and Waterpower Co.*	Belleville, Ont.
3.*D. W. Marrs, *Designer and Estimator, Riter-Conley Mfg., Co.*	Pittsburg, Pa.
3. W. A. Maxwell, *Draftsman, Canadian Bridge Co.*	Walkerville, Ont.
1.*Rev. J. Mellon Menzies, B.A.Sc., D.L.S., *Missionary, Wu An*	North Honan, China.
3. L. R. Miller, B.A.Sc.,	Orillia, Ont
1.*B. F. Mitchell, B.A.Sc., *Municipal Engineer.*	Edmonton, Alta.
1. F. F. Montague, *Law Student.*	506 Union Bank Bldg., Winnipeg, Man.
1.*W. J. Moore, O.L.S., *Morris and Moore, Land Surveyors and Architects.*	Pembroke, Ont.
1. C. R. Murdock,	Weyburn, Sask.
2. C. J. Murphy, B.A.Sc., *Assistant Engineer, Crow's Nest Pass Coal Co.*	Fernie, B.C.
1.*W. P. Near, B.A., B.A.Sc., *Staff of City Engineer.*	Toronto, Ont.
2. R. Neelands,	Port Hammond, B.C.
3. D. G. Park, B.A.Sc., *Engineer, Waldon Co., Heating Enginners.*	92 Arlington St., Winnipeg, Man.
3. G. W. Paterson, *Salesman, Canadian Financiers, Ltd.*	Vancouver, B.C.
5. R. E. Pettingill, *Chief Chemist, Portland Cenemt Co.*	Port Colborne, Ont.
2.*R. C. Purser, B.A.Sc.,	Windsor, Ont.
3. N. R. Robertson, B.A.Sc.,	Walkerton, Ont.
1. J. O. Roddick, B.A.Sc., *Assistant Engineer, Dept. of Public Works of Canada.*	Toronto, Ont.
1. C. H. Rogers, B.A.Sc., *Peterboro Canoe Co.*	Peterboro' Ont.

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*Diploma with honours.

1906—*Continued.*

2.*O. ROLFSON, B.A.Sc., D.L.S., Walkerville, Ont.
Dominion Land Surveyor, Peace River District.

1. R. C. ROSS, B.A.Sc., Ottawa, Ont.
Department of the Interior.

1. K. G. ROSS, Sault Ste. Marie, Ont.
With Lang & Keys, Engineers and Surveyors.

1.*H. T. ROUTLY, O.L.S., D.L.S., Haileybury, Ont.
Routly, Summers & Malcolmson, Engineers amd Surveyors.

2. J. H. RYCKMAN, Chicago, Ill.
Bridge and Bldg. Dept., Chicago Milwaukee & St. Paul Ry.

3.*W. K. SANDERS, 58 Webster St., West Newton, Mass.

1.*W. A. SCOTT, B.A.Sc., D.L.S., Galt, Ont.
Dominion Land Surveyor.

1.*W. M. STEWART, B.A.Sc., 142 Aberdeen Ave., Hamilton, Ont.

2. J. E. THOMSON, B.A.Sc., W. Virginia, U. S. A.
With Sterling Coal Co.

3.*C. L. VICKERY, 112 Barlow St., Fall River, Mass.
Chief Engineer, American Thread Co.

5. W. E. WICKETT (deceased).

3.*J. N. WILSON, B.A.Sc., Toronto, Ont
Electrical Dept., City of Toronto.

3*E. M. WOOD, B.A.Sc., 136 Lee Ave., Toronto, Ont.

1907.

3.*F. G. ALLEN, B.A.Sc., Hyde Park, Mass.
Assistant to Chief Engineer, B.F. Sturtevant Co.,

1. F. J. ANDERSON, B.A.Sc., Niagara Falls, Ont.

1. A. P. AUGUSTINE, Vancouver, B.C.
B. C. Land Surveyor.

3.*H. D. BOWMAN, B.A.Sc., Niagara Falls, Ont.
With the Ontario Power Co.

3. W. S. BRADY, B.A.Sc., Toronto, Ont.

1. G. H. BROUGHTON, Penticton, B.C.

1. J. A. BROWN, B.A.Sc., Toronto, Ont.
Fellow in Drawing, University of Toronto.

1. C. E. BUSH, B.A.Sc., 285 College St., Toronto, Ont.

3. J. H. CASTER, Peterboro', Ont.
Production Dept. Can. Gen. Elec. Co.

1.*E. CAVELL, Saskatoon, Sask.
Wiggins & Cavell, Surveyors and Engineers.

1.*C. B. B. CONNELL, Glasgow, Scotland.
With Mirrless & Watson.

3.*G. C. COWPER, B.A.Sc., Frankford, Ont.
Trent Valley Canal.

2. J. V. CULBERT, B.A.Sc., Toronto, Ont.
Staff of Willis Chipman, C.E.

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*Diploma with honours.

1907—*Continued.*

3.*R. S. Davis, B.A.Sc., Calgary, Alta.
Sales Engineer, Canadian Westinghouse Co.

3. S. D. Evans, B.A.Sc., Leamington, Ont.

3.*F. R. Ewart, B.A.Sc., Toronto, Ont.

1. G. R. S. Fleming, Toronto, Ont.
With Atwell Fleming Printing Co.

6. P. C. Fux, B.A.Sc., Brantford, Ont.
With Waterous Engine Works Co.

1. J. S. Galletly, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

2. G. Galt, B.A.Sc., East Ely, Nevada.
With Nevada Co.

1. A. B. Garrow, B.A.Sc., Toronto, Ont.
Staff of City Engineer.

1. A. Gillies, B.A.Sc., Fort William, Ont.

1. G. W. Graham, Eugenia, Ont.

3. C. S. Grasett, B.A.Sc., 8 Harbord St., Toronto, Ont.

1.*R. E. W. Hagarty, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.

3. K. Hall, B.A.Sc., 39 Sherman Ave., Hamilton.

1. C. T. Hamilton, B.A.Sc., Niagara Falls, Ont.
With Ontario Power Co.

3. R. A. Hare. St. Catharines, Ont.

3.*H. O. Hill, B.A.Sc., Pittsburgh, Pa.
With Riter-Conley Mfg. Co.

1.*T. H. Hogg, B.A.Sc., Niagara Falls, Ont.
Assistant to Supt. of Construction, Ontario Power Co.

3.*C. H. Hutton, B.A.Sc., Hamilton, Ont.
Engineering Staff, Dominion Power Co.

1. H. M. Hyland, B.A.Sc., 72 St. Mary St., Toronto, Ont.

3. E. W. Hyman, B.A.Sc., London, Ont.
Assistant Superintendent, London Electric Co.

3.*L. G. Ireland, B.A.Sc., Belleville, Ont.
Supt., Midland Construction Co., Ltd.

1.*W. Jackson, B.A.Sc., Niagara Falls, Ont.
With Ontario Power Co.

4.*C. B. Jackson, Chicago, Ill.
Estimating Dept., E. Everett Clora Co.

3.*E. W. Kay, B.A.Sc., Winnipeg, Man.
Salesman, Canadian Westinghouse Co.

3. D. F. Keith, Provo, Utah.
Electrical Engineer, Telluride Power Co.

1. H. P. Keith, Comber, Ont.

1. A. A. Kinghorn, B.A.Sc., Toronto, Ont.
Inspector of Roadways, City Engineers Department.

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*Diploma with honours.

1907—*Continued.*

1. L. W. Klingner 568 Spadina Ave., Toronto, Ont.
1.*F. C. Lamb, B.A.Sc., North Battleford, Sask.
Department of Public Works.
3. A. D. LePan, B.A.Sc., Toronto, Ont.
Assistant Superintendent of Buildings and Grounds, University of Toronto.
1. J. H. Lindsay, Toronto, Ont.
Fellow in Surveying, University of Toronto.
3. J. A. D. McCurdy, Hammondsport, N.Y.
With Graham Bell, Esq.
1.*J. B. McFarlane, B.A.Sc., 60 Lonsdale Rd., Toronto, Ont.
Dominion Land Surveyor.
3.*D. J. McGugan, B.A.Sc., Vancouver, B.C.
With Humphreys & Tupper, Civil Engineers and Surveyors.
3. A. H. McIntosh, Chicago, Ill.
With Illinois Steel Co.
3. F. W. McNeill, B.A.Sc., Peterboro', Ont.
Canadian General Electric Co.
1.*M. K .McQuarrie, Vancouver, B.C.
Terminal Engineer, C.P. Ry. Co.
1.*G. MacLeod, Montreal, P.Q.
Assistant Secretary, Can. Soc. C.E.
1. A. G. Mackay, New York, N.Y.
With Hudson & Manhattan Ry. Co.
1. W. S. Malcolmson, B.A.Sc., Haileybury, Ont.
Routly, Summers & Malcolmson, Engineers and Surveyors.
3. S. A. Marshall, Snelgrove, Ont.
6. D. H. C. Mason, B.A.Sc., Toronto, Ont.
1. J. W. Melson, B.A.Sc., Toronto, Ont.
Fellow in Drawing, University of Toronto.
1. G. G. Mills, B.A.Sc., Toronto, Ont.
3. J. B. Minns, B.A.Sc., Peterboro', Ont.
Canadian General Electric Co.
4.*G. N. Molesworth, Toronto, Ont.
Draftsman, Eden Smith & Son, Architects.
1. J. M. Moore, B.A.Sc., London, Ont.
With McClary Mfg. Co.
5.*P. F. Morley, 177 Pearson Ave., Toronto, Ont.
1. E. W. Murray, Stratford, Ont.
Engineer, with Edge & Gutteridge, Contractors and Builders.
3. J. D. Murray, Toronto, Ont.
With Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. E. W. Neelands, B.A.Sc., New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. R. E. K. Neelands, B.A.Sc., Brampton, Ont.
2.*B. Neilly, B.A.Sc., Cobalt, Ont.
Assayer, Black Consolidated.

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*Diploma with honours.

1907—*Continued.*

1. A. E. Nourse, B.A.Sc., Toronto, Ont.
Assistant Engineer, Expanded Metal Co.

3. J. J. O'Sullivan, Toronto, Ont.
With Canada Railway News Co.

2. T. K. Paton, Wardner, Ida.
Mining Engineer.

1. F. W. Paulin, O.L.S., Niagara Falls, Ont.
Civil Engineer.

1. R. B. Potter, Toronto, Ont.
Post-Graduate course in Engineering. University of Toronto.

3.*F. E. Prochnow, B.A.Sc., Buffalo, N.Y.
With Wilhelm, Parker & Ward, Patent Attorneys.

3.*J. F. Procunier, Bayham. Ont.

3. G. E. Quance, B.A.Sc., Delhi, Ont.

3.*H. Raine, Hamilton, Ont.
With Hamilton Bridge Works Co.

1.*J. L. Rannie, B.A.Sc., Ottawa, Ont.
Observer, Geodetic Survey.

3. C. W. B. Richardson, B.A.Sc., Montreal, Que
Motive Power Dept., Angus Shops.

1. A. A. Ridler, Toronto, Ont.
Supt., Constructing & Paving Co., Ltd.

5. H. E. Rothwell, Port Richmond, N.Y.
Assistant Chemist, Standard Varnish Works.

5. C. A. Schofield, Buffalo, N.Y.
Chemist, Schoell-Kopf-Hartford & Hanna Co.

1.*A. C. T. Sheppard, Ottawa, Ont.
Department of Mines.

1. F. R. Smith, B.A. Gowganda, Ont.
Manager, Can. Gowganda Silver Mines.

3. E. R. Smithrim, B.A.Sc., Sault Ste., Marie, Ont.
With Tagona Water and Light Co.

1.*W. Snaith, Toronto, Ont.
Assistant Engineer, Barber & Young.

3. A. C. Spencer, B.A.Sc., London, Ont.
Mechanical Engineer, McClary Mfg. Co.

3. G. S. Stewart, Toronto, Ont.
Agent, Canadian General Electric Co.

1. J. A. Stiles, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.

3.*J. L. Stiver, Ottawa, Ont.
Electrical Standard Laboratory, Inland Revenue Department.

1. J. L. G. Stuart, B.A.Sc., Toronto, Ont.
Railway and Special Works Department, City Hall.

1. G. F. Summers, O.L.S., Haileybury, Ont.
Routly, Summers & Malcolmson, Engineers and Surveyors.

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*Diploma with honours.

1907—*Continued.*

1.*H. W. SUTCLIFFE, New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.

1. P. M. THOMPSON, B.A.Sc., Ambridge, Pa.
Draftsman, American Bridge Co.

3. O. R. THOMSON, B.A.Sc., Berlin, Ont.
Inspector, Hydro-Electric Power Commission.

1. L. R. THOMSON, B.A.Sc., Winnipeg, Man.
Lecturer in Civil Engineering, University of Manitoba.

1. W. J. WALKER, Nipigon, Ont.
With Transcontinental Ry.

1. E. D. WILKES, B.A.Sc., Toronto, Ont.
Main Drainage Department, City Hall.

3. A. F. WILSON, B.A.Sc., Chicago, Ill.
Inspector, Ghicago, Telephone Co.

3. M. H. WOODS, Toronto, Ont.
Post-Graduate Course in Engineering, University of Totonto.

1. G. W. A. WRIGHT, 517 Oxford St., London, Ont.
Warren Bituminous Paving Co.

3.J. YOUNG, Toronto, Ont.
Inspector, Canadian Fire Underwriter's Association.

3.*A. R. ZIMMER, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.

1908.

3. H. G. AKERS, B.A.Sc., Toronto, Ont.
Demonstrator in Electrochemistry, University of Toronto.

3. L. F. ALLAN, Toronto, Ont.
Roadway Dept., City Hall.

1.*C. B. ALLISON, South Woodslee, Ont.

1.*R. M. ANDERSON, B.A.Sc., Burlington, Ont.

5. J. R. ARENS, Toronto, Ont.
Post -graduate Course in Engineering, University of Toronto.

3. H. C. BARBER, Toronto, Ont.
Post-graduate Course in Engineering, University of Toronto.

1. E. BARTLETT, B.A.Sc., Smithville, Ont.
Dominion Land Survey Work.

2. F. J. BEDFORD, Porcupine, Ont.

1.*G. G. BELL, Portland, Me.
With Sawyer & Moulton, Consulting Engineers.

3. G. E. BLACK, B.A.Sc., Toronto, Ont.
Public Works Department of Ontario.

3. H. F. BOWES, Toronto, Ont.
Superintendent of Warren Bituminous Paving Co., Ltd.

3.*J. H. BRACE, Brooklyn, N.Y.
With N.Y. Telephone Co.

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*Diploma with honours.

1908—*Continued.*

1. P. R. Brecken, B.A.Sc., Montreal, Que.
General Secretary, Y.M.C.A.

3. E. I. Brown, Nipissing, Ont.
Assistant Engineer on Const. Can. Westinghouse Co., Nipissing Power Company.

1. W. F. M. Bryce, Ottawa, Ont.
Assistant Engineer, City Engineer's Department.

3. P. H. Buchan, B.A.Sc., Vancouver, B.C.
Engineering Department, B.C. Electric Ry. Co., Ltd.

2. J. E. Campbell, B.A.Sc., Copper Cliff, Ont.
Canadian Copper Co.

3. N. A. Campbell, Calgary, Alta.
Chief Chemist, Canada Cement Co.

3. A. M. Carroll, Cobalt, Ont.
Manager, Rochester Cobalt Mines, Ltd.

1. H. R. Carscallen, B.A.Sc., Calgary, Alta.
Assistant Hydrographer, with P. M. Sauder.

3. G. Challen, Goderich, Ont.

1. F. H. Chesnut, B.A.Sc., Mount Lebanon, B.C.
Resident Engineer, C.N.R. Plant.

1. W. E. Cole (deceased).

4.*W. C. Collett, B.A.Sc., Toronto, Ont.
Draftsman, F. S. Baker Trader's Bank Bldg.

1. R. Y. Cory, B.A.Sc., 530 Huron St., Toronto, Ont.

3.*H. Coyne, B.A.Sc., 5930 South Park Ave., Chicago, Ill.
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2.*J. D. Cumming, B.A.Sc., Copper Cliff, Ont.

6. A. D. Dahl, B.A.Sc., Midland, Mich.
Chemist, Dow Chemical Co.

1. F. A. Danks, Box 230, Penticton, B.C.

3. J. Darroch, Detroit, Mich.
Draftsman, Autoparts Mfg. Co.

3. H. C. Doorly, 6 McClellan St., Schenectady, N.Y.

2. R. H. Douglas, Edmonton, Alta.
Department of Public Works,

2.*F. C. Dyer, B.A.Sc., Toronto, Ont.
Demonstrator in Mining, University of Toronto.

1. F. M. Eagleson, Gorrie, Ont.

1. C. Edwards, B.A.Sc., Toronto, Ont.
With Standard Sanitary Mfg. Co.

1. S. L. Evans, B.A.Sc., Corinth, Ont.

1. E. O. Ewing, Campbellford, Ont.

1. O. L. Flanagan, B.A.Sc., Toronto, Ont.
With C. H. Mitchell, Consulting Engineer, 1003 Traders' Bank Bldg.

1. C. Flint, B.A.Sc., Monadnock, B.L., Chicago.
With MacDonald Engine Co.

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*Diploma with honours.

1908—*Continued.*

1. A. H. Foster, B.A.Sc., Toronto, Ont.

3. G. C. Francis, Toronto, Ont.
City Engineer's Staff, Roadway's Department.

3. S. S. Gear, Fort Erie.

1. C. A. Grassie, B.A.Sc., Welland, Ont.

3.*C. L. Gulley, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.

3. J. W. Hackner, B.A.Sc., Nairn Centre, Ont.
Inspector of Public Works.

3. F. L. Haviland, Hamilton, Ont.
Draftsman, Hamilton Bridge Works Co.

1.*C. D. Henderson, Walkerville, Ont.
Canadian Bridge Co.

5.*D. J. Huether, B.A.Sc., Plainfield, N.J.
Manager, Century Rubber Trading Co.

1. A. D. Huether, B.A.Sc., 77 Grenville St., Toronto, Ont.

3.*A. N. Hunter, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.

3. S. B. Iler, Belleville, Ont.
Construction Department, Seymour Power & Electric Co.

1.*J. T. Johnston, B.A.Sc., Campbellford, Ont.
Assistant Engineer on Construction of Trent Canal.

2. H. G. Kennedy, Toronto, Ont.
Post Graduate Course in Engineering, University of Toronto.

1.*W. R. Keys, North Bay, Ont.
Division Engineer, T. & N. O. Ry.

3.*J. N. M. Leslie, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.

3. F. C. Lewis, Chicago, Ill.
American Bridge Co.

3. H. R. Lynar, Toronto, Ont.
Lynar & Mace, Consulting Engineers.

1.*W. G. McGeorge, Chatham, Ont.
Consulting Engineer.

1. J. M. McGregor, Ridgetown, Ont.

1. L. A. McLean, B.A.Sc., (deceased).

1. W. A. A. McMaster, Palmerston, Ont.

1. H. C. McMordie, B.A.Sc., Walkerville, Ont.
With Canadian Bridge Co.

1.*A. A. McRoberts, B.A.Sc., Pontypool, Ont.
Assistant on Dominion Land Survey.

5.*N. G. Madge, New York, N. Y.
Chief Chemist, Continental Rubber Co. of N. Y.

3. J. E. Malone, Chicago, Ill.
With Illinois Steel Co.

5. K. D. Marlatt, Oakwell, Ont.
The Marlatt & Armstrong Co.

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*Diploma with honours.

1908—*Continued.*

1. R. J. Marshall, B.A.Sc., Toronto, Ont.
Demonstrator in Applied Mechanics, University of Toronto.

5. G. L. Milligan, Toronto, Ont.
Post-graduate Course in Engineering, University of Toronto.

1. A. B. Mitchell, Cambridge, Mass.
Student in Architectecture, Harvard University.

4.*J. C. P. Molesworth (deceased).

3. E. D. Monk, B.A.Sc., Pittsfield, Mass.
Testing Department, General Electric Co.

3.*F. H. Moody, B.A.Sc., 49-55 Lafayette St., New York, N.Y.
Associate Editor of "Machinery."

3. J. H. Morice, B.A.Sc., 938 Albany, St., Schenectady, N.Y.

3. F. E. H. Mowbray, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.

3.*W. P. Murray, B.A.Sc., Montreal, Que.
Dominion Bridge Co.

3. W. deC. O'Grady, Winnipeg, Man.
Engineer, Gas Traction Co., Ltd.

1. H. J. Peckover, B.A.Sc., Toronto, Ont.
Fellow in Drawing, University of Toronto.

1.*M. Pequegnat, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.

1. H. G. Phillips, Saskatoon, Sask.
Phillips & Phillips, Civil Engineers and Surveyors.

3. M. Pivnick, Toronto, Ont.
Student in Dentistry.

1.*E. M. Proctor, B.A.Sc., Toronto, Ont.
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3.*C. F. Publow, B.A.Sc., 305 Gladstone Ave., Toronto, Ont.

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1.*W. B. Redfern, B.A.Sc., Steelton, Ont.
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1. F. L. Richardson, B.A.Sc., Toronto, Ont.
With Miller, Cummings & Robertson.

3. H. A. Ricker, B.A.Sc., 101 Leeming St., Hamilton. Ont.

1. A. R. Robertson, B.A.Sc., Toronto, Ont.
Staff of City Engineer.

5. F. A. Robertson, Toronto, Ont.
Assistant Advertising & Business Manager, Farmers' Magazine.

1.*W. A. Robinson, Winnipeg, Man.

3. R. C. Robinson, 134 Edmonton St., Winnipeg, Ont.

5. L. J. Rogers, Toronto, Ont.
Demonstrator in Chemistry, University of Toronto.

2.*R. R. Rose, B.A.Sc., Copper Cliff, Ont.
With Canadian Copper Co.

3. D. Ross, 387 Princess Ave., London Ont.

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*Diploma with honours.

1908—*Continued.*

1. A. O. Secord, Brantford, Ont.
3. W. E. V. Shaw, B.A.Sc., Toronto, Ont.
Purchasing Engineer, Hydro-Electric Power Commission.
3. H. F. Shearer, B.A.Sc., E. Norwood, Ohio.
Testing Engineer, Bullock Electric Mfg. Co.
1. W. L. Stamford, B.A.Sc., Point du Bois, Man
Inspector on Concrete Work, Hydro-Electric Power Plant.
3. R. H. Starr, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System, City Hall.
3. A. W. J. Stewart, Toronto, Ont.
Electrical Department, City Hall.
3. J. St. Lawrence, Erie, Pa.
Supt. of Engine Shops, Erie City Iron Works.
1. J. J. Stock, 445 Cooper St., Ottawa, Ont.
1. H. B. Stuart, B.A.Sc., Hamilton, Ont.
Draftsman, Hamilton Bridge Works Co.
2. J. L. G. Stuart, B.A.Sc., Toronto, Ont.
Railway & Special Works Department, City Hall.
3. A. D. Sword, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. J. W. R. Taylor, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
1.*W. E. Taylor, B.A.Sc., Toronto, Ont.
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3. V. C. Thomas, B.A.Sc., Toronto, Ont.
Demonstrator in Hydraulics, University of Toronto.
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1. C. G. Toms, B.A.Sc., 60 Spencer Ave., Toronto, Ont.
1. H. W. Tye, Winnipeg, Man.
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Post-graduare Course in Engineering, University of Toronto.
1. T. L. Villeneuve, Chicoutimi Que.
Assistant Engineer, Dept., of Public Works.
1. J. A. Walker, B.A.Sc., Nelson B.C.
With A. L. McCulloch, C.E., B.C.L.S.
3.*B. W. Waugh, Toronto, Ont.
Post-graduate Course in Engineering, University of Toronto.
3. R. M. Wedlake, B.A.Sc., Brantford, Ont.
With Cockshutt Plow Co., Ltd.
3. R. P. Weir, Toronto, Ont.
With C. H. Mitchell, Consulting Engineer.
1. A. M. West, B.A.Sc., Vancouver, B.C.
C.N.R. Office.
1. W. R. White, Drayton, Ont.
3. W. J. White, B.A.Sc., Boston, Mass.
Supt., on Construction, General Electric Co.

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*Diploma with honours.

1908—*Continued.*

3.*F. D. WILSON, B.A.Sc., Toronto. Ont.
Draftsman, McGregor & McIntyre, Ltd.
1. J. M. WILSON, Moose Jaw, Sask.
City Engineer.
1. D. O. WING, Prince Rupert, B.C.
With G.T.P. Co.
3*R. YOUNG, Lake Bunstzen, Burrard Inlet., B.C.

1909.

3. E. G. ARENS, Niagara Falls, Ont.
Draftsman with H. D. Symmes, Contractor.
3. H. V. ARMSTRONG, Dunnville, Ont.
Engineering Staff of Willis Chipman, C.E.
2.*E. T. AUSTIN, Toronto, Ont.
Post-graduate Course in Engineering, University of Toronto.
3. W. H. BARRY, B.A.Sc., Niagara Falls, Ont.
3. R. D. S. BECKSTEDT, B.A.Sc., Wilkinsburg, Pa.
3. R. E. BEITH, Cochrane, Ont.
With Transcontinental Ry.
1.*G. A. BENNETT, B.A.Sc., Box 1928, Calgary, Alta.
Domimion Land Surveyor, Dept. of the Interior.
3. E. R. BIRCHARD, B.A.Sc., Barrie, Ont.
Canada Producer & Gas Engine Co.
3. W. D. BLACK, B.A.Sc., Montreal, Que.
Supt., Otis-Fensom Elevator Co., Ltd.
3.*D. C. BLIZARD, Toronto, Ont.
Post-graduate Course in Engineering, University of Toronto.
1.*W. J. BOULTON, Wallaceburg, Ont.
3. G. H. BOWEN, B.A.Sc., Niagara Falls, Ont.
Engineer on Construction, Queen Victoria Park.
3. C. E. BROWN, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
1. E. W. BROWNE, B.A.Sc., 247 Cannon St. E., Hamilton, Ont.
1. J. A. BUCHANAN, Comber, Ont.
3. J. E. BURNS, B.A.Sc., 231 Seaton St., Toronto, Ont.
1. M. G. CAMERON, B.A.Sc., Peterboro', Ont.
3.*R. A. CAMPBELL, Alliston, Ont.
1. V. S. CHESNUT, Mount Lebanon, B.C.
Canadian Northern Ontario Ry.
1.*C. G. CLINE, Toronto, Ont.
Post-graduate Course in Engineering, University of Toronto.
1. J. G. COLLINSON, B.A.Sc., St. Thomas, Ont.
1. G. W. COLTHAM, B.A.Sc., Aurora, Ont.
3.*H. A. COOCH, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.

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*Diploma with honours.

1909—*Continued.*

3. W. E. Corman, Stony Creek, Ont.
3. T. H. Crosby, Toronto, Ont.
Post-graduate Course in Engineering, University of Toronto.
3. R. H. Cunningham, Chicago, Ill.
With Bryan-Marsh Co.
1.* F. A. Dallyn, B.A.Sc 1488 King St. W., Toronto, Ont.
3. C. N. Danks, Sherbrooke, Que.
Draftsman, Canadian Rand Co., Ltd.
1. E. M. Dann, Ottawa, Ont.
Railway Lands Branch, Dept. of the Interior.
3. H. W. Davis, Kingston, Ont.
With A. Davis & Son, Ltd., Leather Manufacturers.
2.*A. I. Davis, B.A.Sc., 82 Kendal Ave., Toronto, Ont.
1. H. C. Davis, Burlington, Ont.
1. I. H. Dawson, St. Catharines, Ont.
Draftsman.
3. W. H. Delahaye, B. A. Sc., Pembroke, Ont
3. W. P. Derham, B.A.Sc., Ottawa, Ont.
5.*W. A. Dodds, B.A.Sc., Syracuse, N.Y.
With Penman Littlehales Chemical Co.
1. R. H. Douglas, Edmonton, Alta.
Department of Public Works.
1. F. S. Falconer, B.A.Sc., Shelburne, Ont.
3. T. A. Fargey, B.A.Sc., Newark, N. J.
With General Electric Co.
1. J. B. Ferguson, 1811 Fisher Bldg., Chicago, Ill.
With Jones, Stewart & Co.
3. A. T. Fergusson, B.A.Sc., Toronto, Ont.
3. T. E. Freeman, B.A.Sc., Peterboro', Ont.
Canadian General Electric Co.
3. E. R. Frost, B.A.Sc., Toronto, Ont.
With Smith, Keery & Chace.
1. A. E. Glover, Toronto, Ont.
Post-graduate Coures in Engineering, University of Toronto.
5. A. E. Gooderham, Toronto, Ont.
1. D. A. Graham, B.A.Sc., Ivan, Ont.
2. R. R. Grant, 106 Warren Rd., Toronto, Ont.
1. J. E. Gray, Toronto, Ont.
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1. G. E. D. Greene, B.A.Sc., Toronto, Ont.
1. W. H. Greene, 26 South Drive, Toronto, Ont.
1. W. W. Gunn, B.A.Sc., Montreal, Que.
With Dominion Bridge Co.
3. C. J. Harper, Pittsfield, Mass.
1. D. W. Harvey, B.S.Ac., London, Ont.
1. C. O. Hay, 114 Liberty St., New York, N.Y.
Supt. on Construction, Muralt & Co.

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*Diploma with honours.

1909—*Continued.*

3.*J. HEMPHILL, *Canton Electric Power Co.*	Canton, Ohio.
1.*G. HOGARTH, *Engineer's Office, Dept. of Public Works of Ontario.*	Toronto, Ont.
3. A. E. HOLMES, B.A.Sc., *Canadian Westinghouse Co.*	Hamilton, Ont.
3. C. R. HOLMES, *Post-graduate Course in Engineering, University of Toronto.*	Toronto, Ont.
1. G. C. HOSHAL, B.A.Sc.,	Toronto, Ont.
3. C. HUGHES, B.A.Sc.,	Toronto, Ont.
1. A. E. HUNTER, B.A.Sc.,	Toronto, Ont.
3.*H. IRWIN, B.A.Sc., *Secretary, Engineering Society, University of Toronto.*	Toronto, Ont.
3. J. ISBISTER, B.A.Sc.,	Wingham, Ont.
3. F. P. JACKES, B.A.Sc., *With Canadian Westinghouse Co.*	Toronto, Ont.
1.*J. E. JACKSON,	Oxford Centre, Ont.
1. E. W. JAMES, B.A.Sc.,	Toronto, Ont.
1.*C. C. JOHNSON, B.A.Sc., *City Hall.*	Toronto, Ont.
1. C. E. JOHNSTON, *Post-graduate Course in Engineering, University of Toronto.*	Toronto, Ont.
1. W. J. JOHNSTON,	Porcupine, Ont.
1.*A. H. E. KEFFER, *With T. & N.O. Ry.*	North Bay, Ont.
3. J. B. O. KEMP, B.A.Sc., *Fellow in Drawing, University of Toronto.*	Toronto, Ont.
3. W. R. KEY, B.A.Sc., *Mechanical Draftsman.*	Toronto, Ont.
5. H. N. KLOTZ, B.A.Sc., *Chemist, Gutta Percha & Rubber Co.*	Toronto, Ont.
3. A. W. LAMONT, B.A.Sc., *Sales Engineer, Canadian Westinghouse Co., Ltd.*	Winnipeg, Man.
3.*C. B. LANGMUIR, B.A.Sc., *Sales Dept., Factory Products, Ltd.*	Toronto, Ont
3. A. E. LENNOX, B.A.Sc., *National Electric Lamp Association.*	Cleveland, Ohio.
1.*R. W. E. LOUCKS, *Asst. to A. Fawcett, D.L.S.*	Delisle, Sask.
1. N. C. A. LLOYD,	
3. E. D. MACFARLANE, B.A.Sc.,	Cleveland, Ohio.
1. J. G. MACKINNON, *Optical Dept., T. Eaton Co.*	Toronto, Ont.
1. W. A. MACLACHLAN	Guelph, Ont.
3. B. A. MACLEAN, B.A.Sc.,	Hamilton, Ont.
1. N. W. MACPHERSON, B.A.Sc.,	St. Thomas, Ont.

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*Diploma with honours.

1909—*Continued.*

3. D. D. McAlpine, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. A. S. McArthur, B.A.Sc., Toronto, Ont.
3. C. R. McCollum, B.A.Sc., Toronto, Ont.
With Canada Cycle & Motor Co.
3.*A. S. McCordick, Toronto, Ont
Post-Graduate Course in Engineering, University of Toronto.
3. P. J. McCuaig, B.A.Sc., Milwaukee, Wis.
1. F. H. McKechnie, Cochrane, Ont.
Resident Engineer, Trans. Ry.
3. W. G. McIntosh,.
3. G. McLeod, Waupaca, Wis.
Electrician, Electric Light & Ry. Co.
1. V. McMillan, B.A.Sc., Toronto, Ont.
3. N. H. Manning, B.A.Sc., Toronto, Ont.
Demonstrator in Mechanical Engineering. University of Toronto.
1.*A. B. Manson, B.A.Sc., Stratford, Ont
City Engineer's Staff.
1.*E. S. Martindale, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. O. W. Martyn, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. C. A. Morris, B.A.Sc., Toronto, Ont.
3. G. Morton, B.A.Sc., Calgary, Alta.
Canadian Westinghouse Co.
1.*F. V. Munro, B.A.Sc., Toronto, Ont.
Fellow in Drawing, University of Toronto.
1. E. A. Neville, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. J. Newton, B.A.Sc., Toronto, Ont.
City Engineer's Department.
3.*L. S. Odell, Toronto, Ont.
Fellow in Drawing, University of Toronto.
3. V. J. O'Donnell, Toronto, Ont.
3. J. J. O'Hearn, Peterboro', Ont.
Canadian General Electric Co.
1. A. W. Pae, Calgary, Alta.
District Hydrographer.
1.*A. M. Petry, B.A.Sc., Toronto, Ont.
Assistant Manager, "Chas. Potter."
1. R. B. Pigott, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. G. M. Ponton, Blairmore, Alta.
With West Canadian Collieries Co.
3.*C. J. Porter, B.A.Sc., Portland, Oregon.
Draftsman, Mount Hood Ry. & Power Co.
3. A. I. Proctor, Hamilton, Ont.

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*Diploma with honours.

1909—*Continued.*

1. J. Quail, Toronto, Ont.

1. A. F. Ramsperger, Toronto, Ont.
Draftsman, With Toronto Iron Works Ltd.

1.*C. R. Redfern, B.A.Sc., Toronto, Ont.
Demonstrator in Applied Mechanics. University of Toronto.

3.*L. T. Rutledge, B.A.Sc., Toronto, Ont.
Fellow in Drawing, University of Toronto.

1. A. U. Sanderson, B.A.Sc., Toronto, Ont.

3.*R. A. Sara, Toronto, Ont.
Post-Graduate Course in Engineering, Univrsity of Toronto.

3.*A. Schlarbaum, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3.*C. Schwenger, B.A.Sc., Toronto, Ont.
Electrical Department, City Hall.

1. C. A. Scott, Toronto, Ont.
Roadway Department, City Hall.

1. A. Sedgwick, Kaministikuia, Ont.
Engineer, Dog Lake Storage Works.

1. B. H. Segre, Winnipeg, Man.

1. F. V. Seibert, Toronto, Ont.
Fellow in Surveying, University of Toronto.

5. M. R. Shaw, Midland, Mich.
Chemist, Dow Chemical Co.

3. M. W. Sparling, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3. J. J. Spence, Toronto, Ont.

1. D. S. Stayner, B.A.Sc., Toronto, Ont.
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1.*N. C. Stewart, Toronto, Ont.
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1.*P. H. Stock, St. Catharines, Ont.
Resident Engineer, N. St. C. & T. R. Ry.

1. J. C. Street, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3. S. Stroud, B.A.Sc., East Pittsburgh, Pa.
Westinghouse Electric & Manufacturing Co.

1. C. C. Sutherland, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

1. R. G. Swan, B.A.Sc., Toronto, Ont.

1. A. D. Sword, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

1.*H. W. Tate, B.A.Sc., Toronto, Ont.

3.*E. A. Thompson, Toronto, Ont.
With Smith, Kerry & Chace.

1. G. A. Tipper, B.A.Sc., Toronto, Ont.

3. A. G. Trees, B.A.Sc., Toronto, Ont.

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*Diploma with honours.

1909—*Continued.*

3. W. G. TURNBULL, B.A.Sc., Milwaukee, Wis.
The Cutler Hammer Mfg. Co.
1. J. E. UNDERWOOD, Lakelet, Ont.
1. C. P. VANNORMAN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. J. VANNOSTRAND, Toronto, Ont.
Student.
1. A. VATCHER, B.A.Sc., Freshwater, Bay deVerde, Nfld.
With the Reid Newfoundland Co.
1. C. M. WALKER, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. E. E. WEBB, Orillia, Ont.
1. C. E. WEBB, B.A.Sc., Toronto, Ont.
3. F. C. WHITE, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. A. R. WHITELAW, Toronto, Ont.
With Smith, Kerry & Chace.
1. R. G. WILKINSON, Aberarder, Ont.
5.*J. A. McK. WILLIAMS, B.A.Sc., Toronto, Ont.
1.*O. T. G. WILLIAMSON, B.A.Sc., Guelph, Ont.
3. L. R. WILSON, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. F. F. WILSON, Toronto, Ont.
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2. S. A. WOOKEY, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

1910.

2. J. H. ADAMS, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*O. F. ADAMS, Toronto, Ont.
Fellow in Electrical Engineering, University of Toronto.
1.*W. G. AMSDEN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. J. A. BAIRD, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*W. J. BAIRD.
1. H A. BARNETT, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*E. W. BERRY, Seaforth, Ont.
1.*H. C. BINGHAM, Moose Jaw Sask.
City Engineer's Department.
2. D. G. BISSET, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. R. H. H. BLACKWELL, Toronto, Ont
1.*E. P. BOWMAN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

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*Diploma with honours.

1910—*Continued.*

2. A. F. BROCK, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. M. O. BROWNE, Toronto, Ont.
3. J. R. BURGESS, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. N. G. H. BURNHAM, Toronto, Ont.
3.*W. C. CALE, Glenwood Springs, Colo.
With Central Colorado Power Co.
2.*A. D. CAMPBELL, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. W. M. CARLYLE, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. N. S. CAUDWELL, Toronto, Ont.
1.*D. C. CHISHOLM, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. J. A. CLAVEAU, Chicoutimi, P.Q.
3. L. S. COCKBURN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. A. G. CODE, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. C. R. COLE, Woodstock, Ont.
1. G. A. COLQUHOUN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
4.*J. H. CRAIG, Toronto, Ont.
Fellow in Drawing, University of Toronto.
3.*C. D. DEAN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. R. L. DOBBIN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*W. P. DOBSON, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*J. M. DUNCAN, Toronto, Ont.
2. V. H. EMERY, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. W. J. EVANS, Jermyn, Ont.
3. H. W. FAIRLIE, Toronto, Ont.
Tungsiolier Co., of Canada.
3.*C. R. FERGUSON, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. J. W. FERGUSON, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
4.*J. B. K. FISKEN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. A. W. FLETCHER, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*J. A. FLETCHER, Fisher River, Man.
Assistant to E. W. Robinson, D.L.S.

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*Diploma with honours.

1910—*Continued.*

3. F. T. FLETCHER, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. T. R. C. FLINT,
3. R. C. FOLLETT,
2. J. M. FOREMAN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. W. J. FOSTER,
3.*W. C. FOULDS, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. A. FRASER, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. J. FREDIN, London, Ont.
1. M. M. GIBSON, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. V. A. E. GOAD, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. V. S. GOODEVE, Toronto, Ont
2. W. A. GORDON, Sundridge, Ont.
3. V. F. GOURLAY, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. R. L. GREENE, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
5. J. H. HARRIS, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*N. J. HARVIE, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. J. G. HELLIWELL, Toronto, Ont.
1. J. F. HENDERSON, Toronto, Ont.
3. F. G. HICKLING, Wilkinsburg, Pa.
2.*P. E. HOPKINS, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*W. J. IRWIN, East Pittsburg, Pa.
Apprenticeship Course, Westinghouse Machine Co.
2. F. L. JAMES, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. H. C. JOHNSTON, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. R. H. JOHNSON, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. J. C. KEITH, Toronto, Omt.
Post-Graduate Course in Engineering, University of Toronto.
2.*J. T. KING, Toronto, Ont.
Fellow in Mining Engineering, University of Toronto.
3. G. A. KINGSTONE, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. G. L. KIRWIN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

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*Diploma with honours.

1910—*Continued.*

5.	P. T. Kirwin,	Toronto, Ont.
	Fellow in Chemistry, University of Toronto.	
1.	S. Knight,	Toronto, Ont.
	Post-Graduate Course in Engineering, University of Toronto.	
3.	E. R. Lawler,	Toronto, Ont.
3.*	C. B. Leaver,	Toronto, Ont.
	Post-Graduate Course in Engineering, University of Toronto.	
3.	R. G. Lee,	Toronto, Ont.
	Post-Graduate Course in Engineering, University of Toronto.	
1.	J. C. Longstaff,	Toronto, Ont.
3.	J. B. MacDonald,	Toronto, Ont.
	Post-Graduate Course in Engineering, University of Toronto.	
2.*	A. D. Macdonald,	
1.	J. A. MacDonald,	Toronto, Ont.
	Post-Graduate Course in Engineering, University of Toronto.	
1.	G. A. MacDonald,	Toronto, Ont.
	Post-Graduate Course in Engineering, University of Toronto.	
1.*	A. E. MacGregor,	Wilkeson, Wash.
	Analyst & Draftsman, Wilkeson Coal & Coke Co.	
1.	E. G. MacKay,	Hamilton, Ont.
1.*	G. G. MacLennan,	Prince Albert ,Sask.
	Assistant to A. St. Cyr, D.L.S.	
1.	D. D. MacLeod,	Toronto, Ont.
	Post-Graduate Course in Engineering, University of Toronto.	
3.	H. G. MacMurchy,	Toronto, Ont.
	Post-Graduate Course in Ebgineering, University of Toronto.	
3.*	H. J. MacTavish,	Toronto, Ont.
	Post-Graduate Course in Engineering, University of Toronto.	
4.	T. C. McBride,	Toronto, Ont.
	Post-Graduate Course in Engineering, University of Toronto.	
1.	S. G. McDougall,	Toronto, Ont.
	Post-Graduate Course in Engineering, University of Toronto.	
1.*	T. A. McElhanney,	Kincardine, Ont.
1.*	P. J. McGarry,	Merriton, Ont.
3.*	L. R. McKim,	Wyecombe, Ont.
1.*	J. McNiven,	Toronto, Ont.
	Post-Graduate Course in Engineering, University of Toronto.	
3.	J. I. McSloy,	Toronto, Ont.
	Post-Graduate Course in Engineering, University of Toronto.	
2.	A. W. R. Maisonville,	Toronto, Ont.
	Post-Graduate Course in Engineering, University of Toronto.	
1.*	N. Marr,	Cochrane, Ont.
	Engineering Staff, Transcontinental Ry.	
1.*	W. H. Martin,	Toronto, Ont.
	Post-Graduate Course in Engineering, University of Toronto.	
2.	A. C. Matthews,	Toronto, Ont.
	Post-Graduate Course in Engineering, University of Toronto.	

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*Diploma with honours.

1910—*Continued.*

3.*H. O. Merriman, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

1.*D. J. Miller, Orillia, Ont.

1. F. S. Milligan, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3. P. E. Mills, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3. J. P. Morgan, Newmarket, Ont.

1. A. H. Munro, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3. J. C. Nash, Hamilton, Ont.
Draftsman, Canadian Westinghouse Co.

1.*V. A. Newhall, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

2.*W. E. Newton, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

1. F. T. Nichol, Toronto, Ont
Post-Graduate Course in Engineering, University of Toronto.

1. C. M. O'Neil, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3. C. E. Palmer, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3. G. C. Parker, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3. K. K. Pearce, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3. C. H. Phillips, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

1. D. E. Pye, Cranbrook, B.C.

1. W. S. Ramsay, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3. B. J. Redfern, Toronto, Ont.

1. H. C. Ritchie, Calgary, Alta.

1. O. W. Ross, Lachine, P.Q.
With Dominion Bridge Co.

1. W. F. B. Rubidge, Dixie, Ont.

3. W. C. Shaw, Toronto, Ont.

1.*W. C. Smith, Two Harbors, Minn.
With D. & I. R.R. Co.

2. F. L. Smith, Phoenix, B.C.
Assayer, B.C. Mining Co.

5. G. E. Smith, Toronto, Ont.

2. R. J. Spry, Greenwood, B.C.
Metallurgist, The B. C. Copper Co.

2. A. L. Steele, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

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*Diploma with honours.

1910—*Continued.*

2.*H. M. Steven, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*L. I. Stone, Toronto, Ont.
3. A. L. Sutherland, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. E. A. Ternan, Toronto, Ont.
Engineering Dept., Canadian General Electric Co.
5.*W. H. Thom, Watford, Ont.
3. H. B. Thompson, Wellington, Ont.
3. R. M. A. Thompson, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2.*C. G. Titus, Gowganda, Ont.
Manager, The Bartlett Mines.
3. K. M. vanAllen, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. L. T. Venney, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. N. Wagner, Toronto, Ont.
Bridge Dept., Canada Foundry Co.
1. R. M. Walker,
2. T. Walton, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. G. A. Warrington, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. M. B. Watson, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*H. M. White, Chatham, Ont.
4. W. S. Wickens, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*G. K. Williams, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*W. H. Wilson, Toronto, Ont.
Fellow in Physics, University of Toronto.
1. G. R. Workman, Grand Mere, Que.
With the Laurentide Paper Co., Ltd.
3. L. A. Wright, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*A. W. Youell, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. W. S. Young, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

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*Diploma with honours.

CERTIFICATES.

MINERALOGY AND ASSAYING.

1896. G. JOHNSTON
1897. E. B. WEBSTER.
1901. G. A. HUNT.

ELECTRICITY.

1896. A. T. TYE, c/o Empresa Hanseatica, Barran quilla, Columbia, South America.
1898. A. N. MCMILLAN, Penetangiushene, Ont.
1900. A. H. SMITH, Oaxaca, Mexico.
Supt., Los Reyes Gold Mining and Milling Co.,
1896. E. I. SIFTON, London, Ont.
Manager, London Electric Construction Co.,
1903. W. ELWELL, (deceased).

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

A

Acres, H. G.	1903
Adams, J. H.	1910
Adams, O. F.	1910
Akers, H. G.	1908
Alexander, J. H	1904
Alison, T. H.	1892
Alison, J. G. R.	1903
Allan, J. R.	1892
Allan, J. L.	1900
Allan, L. F.	1908
Allen, F. G	1907
Allison, C. B	1908
Alport, F.	1906
Amos, W. L.	1906
Amsden, W. G.	1910
Anderson, A. G.	1892
Anderson, F. J.	1907
Anderson, R. M.	1908
Andrews, E.	1897
Angus, H. H.	1903
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Ardagh, A. G	1893
Ardagh, E. G. R.	1900
Arens, A. H.	1906
Arens, H. W. (deceased)	1905
Arens, R. J.	1908
Arens, E. G.	1909
Armer, J. C.	1906
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Armstrong, J.	1895
Armstrong, H. V.	1909
Ashbridge, W. T.	1888
Augustine, A. P.	1907
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Baker, M H.	1906
Baldwin, F. W.	1906
Ball, E. F.	1888
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Banting, E. W.	1906
Barber, H. G.	1902
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Barber, F.	1906
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Barnett, H. A.	1910
Barrett, R. H.,(deceased)	1901
Barrett, J. H.	1904
Barry, W. H	1909
Bartlett, E.	1908
Bates, M. (deceased)	1906
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Beatty, W. G.	1901
Beatty, J. A.	1903
Beauregard, A. T.	1894
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Bennett, G. A.	1909
Bergey, A. E.	1894
Berry, E. W.	1910
Bertram, G. M.	1901
Betts, H. H.	1906
Beynon, D. E.	1906
Bingham, H. C.	1910
Birchard, E. R.	1909
Bissett, D. G.	1910
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Blackwell, R. H. H.	1910
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Blizard, D. C	1909
Boeckh, J. C	1906
Bonnell, M. B	1904
Boswell, E. J	1895
Boswell, M. C	1900
Boulton, W. J	1909
Boustead, W. E. (deceased)	1890
Bow, J. A	1897
Bowen, G. H	1909
Bowers, W. J. (deceased)	1901
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Bowman, E. P	1910
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Bunnell, A. E. K	1906
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Cale, W. C	1910
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Campbell, A. J	1904
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Campbell, R. A	1909
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Carson, W. R	1905
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Carroll, M. J	1906
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Chace, W. G	1901
Chadwick, R. E. C	1906
Challen, G	1908
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Charlesworth, L. C	1893
Charlton, H. W	1897
Chase, A. V	1905
Chesnut, F. H	1908
Chesnut, V. S	1909
Chewett, H. J	1888
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Chilver, H. L	1904
Chisholm, D. C	1910
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Christie, U. W	1904
Christie, A. G	1901
Chubbuck, L. B	1899
Clark, J	1900
Clark, G. T	1906
Clarke, F. F	1903
Claveau, J. A	1910
Clement, W. A	1889
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Cline, C. G	1909
Clothier, G. A	1899
Coates, P. C	1904
Cockburn, J. R	1901
Cockburn, L. S	1910
Code, A. G	1910
Code, S. B	1904
Code, T. F. (deceased)	1904
Cole, W. E. (deceased)	1908
Cole, C. R	1910
Colhoun, G. A	1906
Collett, W. C	1908
Collinson, J. G	1909
Colquhoun, G. A	1910
Coltham, G. W	1909
Conlon, F. T	1902
Connell, C. B. B	1907
Connor, H. V	1902
Connor, A. W	1895
Cooch, H. A	1909
Cook, W. A. Mc	1906
Cooper, C	1899
Corman, W. E	1909
Corrigan, G. D. (deceased)	1890
Corrigan, T. E	1905
Cory, R. Y	1908
Coulson, C. L	1903
Cousins, E. L	1906
Coulthard, R. W.	1899
Cowan, W. A	1904
Cowper, G. C	1907
Coyne, H	1908
Craig, J. A	1899
Craig, J. H	1910
Craig, S. E	1904
Creighton, A. G	1906
Crerar, S. R	1904
Crosby, N. L. R	1905
Crosby, T. H	1909
Culbert, M. T. (deceased)	1902
Culbert, J. V	1907
Cumming, R	1902
Cumming, J. D	1908
Cunningham, R. H	1909
Currie, W. M	1904

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Dahl, A. D	1908
Dallyn, F. A	1909
Daniels, W. N	1906
Danks, F. A	1908
Danks, C. N	1909
Dann, E. M	1909
Darling, E. H	1898
Darroch, J	1908
Davis, R	1907
Davis, A. I	1909
Davis, H. W	1909
Davis. H. C	1909
Davison, J. E	1900
Davison, A. E	1903
Dawson, I. H	1909
Deacon, T. R	1891
Dean, C. D	1910
Death, N. P. F	1906
DeCew, J. A	1896
Delahaye, W. H	1909
Depew, H. H	1904
Derham, W. P	1909
Dickson, G. W	1900
Dickinson, E. D	1900
Dill, C. W	1891
Dixon, H. A	1900
Dobbin, R. L	1910
Dobson, W. P	1910
Dobie, J. S	1895
Dodds, W. A	1909
Doorly, H. C	1908
Douglas, R. H	1908, 1909
Douglas, W. E	1902
Duff, J. A. (deceased)	1890
Duff, W. A	1901
Duggan, G. H	1883
Duncan, J. M	1910
Dundass, C. S	1906
Dunlop, R. J	1902
Dunn, T. H	1893
Dyer, F. C	1908

E

Eagleson, F. M	1908
Eason, D. E	1901
Edwards, W. M	1902
Edwards, C	1908
Elliott, H. P	1896
Elliott, J. C	1899
Elder, A. J	1904
Elwell, W. (deceased)	1902

Emery, V. H.	1910
Empey, J. M.	1902
English, A. B. (deceased)	1890
Evans, S. D.	1907
Evans, S. L.	1908
Evans, W. J	1910
Ewart, J. A.	1894
Ewart, F. R.	1907
Ewing, E. O.	1908

F

Fairbairn, J. M. R.	1893
Fairchild, C.	1892
Fairlie, H. W.	1910
Falconer, F. S.	1909
Fargey, T. A.	1909
Fear, S. L.	1906
Fensom, C. J	1903
Ferguson, C. R.	1910
Ferguson, G. H.	1905
Ferguson, J. B	1909
Ferguson, J. W.	1910
Fergusson, A. T.	1909
Fierheller, H. S. (deceased)	1905
Fingland, W.	1893
Fisken, J. B. K.	1910
Flanagan, O. L.	1908
Fleck, J. G.	1904
Fleming, G. R. S.	1907
Fletcher, A. W.	1910
Fletcher, F. T.	1910
Fletcher, J. A.	1910
Flint, C.	1908
Flint, T. R. C.	1910
Follett, R. C.	1910
Forbes, D. L. H.	1902
Ford, A. L.	1904
Foreman, J. M.	1910
Forrester, C.	1893
Forman, W. E.	1899
Forward, E. A.	1897
Forward, C. C.	1906
Foster, A. H.	1908
Foster, W. J	1910
Foulds, W. C.	1910
Francis, Walter J.	1893
Francis, G. C.	1908
Fraser, A.	1910
Fredin, J.	1910
Freeman, T. E.	1909
Frost, E. R.	1909
Fuce, E. O.	1903
Fullerton, C. H.	1900
Fux, P. C.	1907

G

Gaby, F. A.	1903
Gagne, S. (deceased)	1901
Galletly, J. S.	1907
Galt, G.	1907
Gardner, J. C.	1903
Garland, N. L.	1890
Garrow, A. B.	1907
Gear, S. S.	1908
George, R. E.	1903
Gibbons, J.	1888
Gibson, A. E.	1902
Gibson, M. M.	1910
Gibson, N. R.	1901
Gibson, W. S.	1904
Gillespie, P.	1903
Gillies, A.	1907
Glover, A. E.	1909
Goad, V. A. E.	1910
Goldie, A. R.	1893
Goodall, J. N.	1904
Gooderham, A. E.	1909
Goodeve, V. S.	1910
Goodwin, A. C.	1902
Goodwin, J. B.	1892
Gordon, J. P.	1904
Gordon, W. A.	1910
Gourlay, V. F.	1910
Gourlay, W. A.	1903
Graham, C. W.	1906
Graham, G. W.	1907
Graham, D. A.	1909
Grant, W. F.	1898
Grant, R. R.	1909
Grasett, C. S.	1907
Grassie, C. A.	1908
Gray, A. T.	1897
Gray, W. W.	1904
Gray, A.	1904
Gray, J. E.	1909
Greene, P. W.	1906
Greene, G. E. D.	1909
Greene, R. L.	1910
Greene, W. H.	1909
Greenwood, W. K.	1904
Guernsey, F. W.	1895
Gulley, C. L.	1908
Gunn, W. W.	1909
Gurney, W. C.	1896
Guest, W. S.	1900
Guy, E.	1899

H

Hackner, J. W	1908
Hagarty, R. E. W	1907
Haight, H. V	1896
Hall, K	1907
Hamer, A. T. E	1901
Hamilton, J. F	1903
Hamilton, C. B	1906
Hamilton, C. T	1907
Hanley, S. C	1893
Hanes, G. S	1903
Hanning, G. F	1889
Hara, L. D	1904
Hare, R. A	1907
Harcourt, F. Y	1903
Hare, W. A	1899
Harkness, A. H	1895
Harkness, A. L	1906
Harper, C. J	1909
Harris, C. J	1904
Harris, J. H	1910
Harrison, R. L	1906
Harrison, F. W	1905
Harrison, E	1906
Hartney, J. C	1906
Harvey, C	1901
Harvey, D. W	1909
Harvie, N. J	1910
Haultain, H. E. T	1889
Haviland, F. L	1908
Hay, C. O	1909
Hayes, L. J	1903
Helliwell, J. G	1910
Hemphill, W	1900
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Henderson, E. E	1885
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Henwood, C	1902
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Holcroft, H. S	1900
Holmes, A. E	1909
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Hookway, C. W	1906
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Houston, R. S	1906
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Hyland, H. M	1907
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Irwin, H	1909
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James, E. W	1909
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THE

CALENDAR

OF THE

University of Toronto

FACULTY OF
APPLIED SCIENCE AND ENGINEERING

1912-1913

UNIVERSITY PRESS
TORONTO

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CALENDAR 1912-1913.

1912—Sept.	2	Applications for Registration received.
	3	Last day for receiving applications for Supplemental Examinations.
	17	Supplemental Examinations begin.
	27	Meeting of Faculty Council.
	30	Enrolment.
Oct.	1	First term begins.
		Last day for receiving Vacation Work.
		President's address to students at 3 p.m.
	2	Meeting of Engineering Society.
	4	Meeting of Faculty Council.
	16	Meeting of Engineering Society.
	30	Meeting of Engineering Society.
Nov.	1	Meeting of Faculty Council.
	13	Meeting of Engineering Society.
	27	Meeting of Engineering Society.
Dec.	6	Meeting of Faculty Council.
	11	Meeting of Engineering Society.
	20	First term ends at 1 p.m.
1913—Jan.	7	Second Term begins.
		Last day for receiving Theses for B.A.Sc.
	10	Meeting of Faculty Council.
	15	Meeting of Engineering Society.
	29	Meeting of Engineering Society.
Feb.	4	Faculty Dinner.
	5	Ash Wednesday—Building closed.
	7	Meeting of Faculty Council.
	12	Meeting of Engineering Society.
	26	Meeting of Engineering Society.
Mar.	7	Meeting of Faculty Council.
	12	Meeting of Engineering Society.
	14	Annual elections of Engineering Society.
	21	Good Friday—Building closed.
	26	Annual Meeting of Engineering Society.
April	4	Meeting of Faculty Council.
	7	Lectures and Practical work close.
	11	Annual Examinations begin.
May	5	Meeting of Faculty Council.
June	6	Annual Commencement.

The buildings will be closed on all public holidays and daily at noon during July and August.

University of Toronto.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

President...............R. A. Falconer, LL.D., D.Litt., C.M.G.
Dean of Faculty..................J. Galbraith, M.A., LL.D.
Secretary of Faculty.............A. T. Laing, B.A.Sc.
Bursar........................F. A. Mouré, Esq.

G. R. Anderson, M.A., *Associate Professor of Physics.*	505 Euclid Ave.
R. W. Angus, B.A.Sc., Mem. Am. Soc. M.E. *Professor of Mechanical Engineering.*	42 Howland Ave.
E. G. R. Ardagh, B.A.Sc., *Lecturer in Chemistry.*	Chem. & Mining Bldg.
J. W. Bain, B.A. Sc., *Associate Professor of Applied Chemistry.*	393 Brunswick Ave.
M. C. Boswell, M.A., Ph.D., *Lecturer in Organic Chemistry.*	100 Dewson St.
J. R. Cockburn, B.A.Sc., A.M. Can. Soc. C.E., *Lecturer in Descriptive Geometry.*	100 Walmer Rd.
S. R. Crerar, B.A.Sc., *Lecturer in Surveying.*	10 Carling Ave.
W. Hodgson Ellis, M.A., M.B., *Professor of Applied Chemistry.*	74 St. Alban St.
J. Galbraith, M.A., LL.D., *Professor of Engineering.*	Chem. & Mining Bldg.
P. Gillespie, B.A.Sc., A.M. Can. Soc. C.E., *Associate Professor of Applied Mechanics.*	358 Davenport Rd.
G. A. Guess, M.A., *Professor of Metallurgy.*	Oakville.
H. E. T. Haultain, C. E., M.I.M.M., *Professor of Mining Engineering.*	63 Heath St.
J. McGowan, B.A., B.A.Sc., *Associate Professor of Applied Mechanics.*	Engineering Building.
H. W. Price, B.A.Sc., *Associate Professor of Electrical Engineering.*	474 Palmerston Ave.
T. R. Rosebrugh, M.A., *Professor of Electrical Engineering.*	92 Walmer Rd.
L. B. Stewart, O.L.S., D.T.S., *Professor of Surveying & Geodesy.*	161 Admiral Rd.

J. J. Traill, B.A.Sc., *Lecturer in Hydraulics.*	34 Wolfrey Ave.
W. M. Treadgold, B.A., *Lecturer in Surveying.*	13 Woodlawn Ave. E.
C. H. C. Wright, B.A.Sc., Mem. O.A.A., *Professor of Architecture.*	419 Markham St.

Sessional Appointments.

O. F. Adams, *Fellow in Electrical Engineering.*	144 Winchester St.
L. M. Arkley, M.Sc., A.M. Can. Soc. C.E., *Lecturer in Applied Mechanics.*	614 Crawford St.
J. L. Banks, *Instructor in Modelling.*	304 Jarvis St.
E. W. Banting, B.A.Sc., *Demonstrator in Surveying.*	330 St. George St.
W. C. Blackwood, B.A.Sc., *Demonstrator in Physics.*	38 Henry St.
W. M. Brock, *Fellow in Drawing.*	157 A Beverley St.
J. Burt-Gerrons, B.A., *Demonstrator in Electrochemistry.*	105 Harrison St.
E. Cavell, *Fellow in Surveying.*	182 Sunnyside Ave.
H. A. Cooch, B.A.Sc., *Demonstrator in Electrical Engineering.*	265 Carlton St.
T. H. Crosby, B.A.Sc., *Demonstrator in Electrical Engineering.*	600 Huron St.
R. A. Cunningham, B.Sc. (Edinburgh) *Assistant in Chemistry.*	510 Spadina Ave.
A. V. DeLaporte, *Fellow in Chemistry.*	90 Gloucester St.
S. Dushman, B.A., Ph.D., *Lecturer in Electrochemistry.*	7 Havelock St.
F. C. Dyer, B.A.Sc., *Demonstrator in Mining.*	747 Euclid Ave.
J. B. K. Fisken, B.A.Sc., *Fellow in Drawing.*	60 Madison Ave.
A. Fraser, B.A.Sc., *Fellow in Physics.*	55 Gloucester St.
W. S. Guest, B.A.Sc., *Demonstrator in Electrical Engineering.*	28 St. Joseph St.
R. H. Hopkins, B.A.Sc., *Demonstrator in Electrical Engineering.*	38 Henry St.

A. N. Hunter, B.A.Sc., 121 Dovercourt Rd.
Demonstrator in Electrical Engineering.
C. W. Jefferys, York Mills.
Instructor in Free Hand Drawing and Water Colour.
J. B. O. Kemp, B.A.Sc., 24 Walter St.
Fellow in Drawing.
W. R. Key, B.A.Sc., 19 Bismarck Ave.
Fellow in Applied Mechanics.
J. T. Lagergren, M.E., 8 Carlton St.
Lecturer in Machine Design.
H. M. Lancaster, B.A.Sc., North Residence.
Demonstrator in Chemistry.
J. M. Langstaff, C.A., F.I.A., F.A.S., 666 Bathurst St.
Lecturer in Accountancy.
T. R. Loudon, B.A.Sc., A.M. Can, Soc. C.E. 107 Sheldrake Rd., Eglinton.
Lecturer in Metallurgy.
A. Wellesley McConnell, B.A.Sc., 632 Bathurst St.
Lecturer in Architecture.
R. J. Marshall, B.A.Sc., 119 Balmoral Ave.
Demonstrator in Applied Mechanics.
O. W. Martyn, B.A.Sc., 85 St. George St.
Fellow in Surveying.
J. W. Melson, B.A.Sc., 239 Beverley St.
Fellow in Drawing.
F. S. Milligan, B.A.Sc., 33 Rathnally Ave.
Demonstrator in Mechanical Engineering.
P. W. Mueller, B.A., 96 Warren Rd.
Instructor in German.
R. W. Moffatt, B.A.Sc., 345½ Markham St.
Demonstrator in Drawing.
J. C. Murton, 5 Henry St.
Fellow in Drawing.
W. V. Oke, 357 Delaware Ave.
Fellow in Surveying.
M. Pequegnat, B.A.Sc., 22 St. Mary St.
Demonstrator in Drawing.
C. R. Redfern, B.A.Sc., 426 Brunswick Ave.
Demonstrator in Drawing.
W. F. B. Rubidge, 21 Isabella St.
Fellow in Drawing.
L. T. Rutledge, B.A.Sc., 17 Henry St.
Demonstrator in Drawing.
W. J. Smither, B.A.Sc., 80 College St.
Fellow in Drawing.
A. L. Steele, B.A.Sc., 171 Huron St.
Assistant in Mining Engineering.

R. B. Stewart, M.A., *Lecturer in Mining Engineering.*	175 McCaul St.
L. B. Taylor, M.E., *Lecturer in Mechanical Engineering.*	12 Lowther Ave.
W. E. Taylor, B.A.Sc., *Fellow in Drawing.*	
W. S. Wickens, B.A.Sc., *Fellow in Drawing.*	89 Kendal Ave.
J. A. McKenzie Williams, B.A.Sc., Phm.B., *Fellow in Chemistry.*	39 East Heath St.
A. W. Youell, B.A.Sc., *Demonstrator in Mechanical Engineering.*	85 St. George St.
C. R. Young, B.A.Sc., A.M. Can. Soc. C.E., *Lecturer in Structural Engineering.*	113 Winchester St.
A. R. Zimmer, B.A.Sc., *Demonstrator in Electrical Engineering.*	38 Delaware Ave.

MEMBERS OF THE FACULTY OF ARTS GIVING INSTRUCTION TO STUDENTS IN APPLIED SCIENCE.

F. B. Allan, M.A., Ph.D., *Associate Professor of Organic Chemistry.*	380 Brunswick Ave.
Alfred Baker, M.A., *Professor of Mathematics.*	81 Madison Ave.
B. A. Bensley, B.A., Ph.D., *Associate Professor of Zoology.*	316 Brunswick Ave.
C. A. Chant, M.A., Ph.D., *Associate Professor of Astro-Physics.*	201 Madison Ave.
A. P. Coleman, M.A., Ph.D., *Professor of Geology.*	476 Huron St.
A. T. DeLury, M.A., *Professor of Mathematics.*	University of Toronto.
J. H. Faull, B.A., Ph.D., *Associate Professor of Botany.*	102 Yorkville Ave.
W. J. Loudon, B.A., *Professor of Mechanics.*	133 Walmer Rd.
M. A. Mackenzie, M.A., Ph.D., *Associate Professor in Mathematics.*	1 Bellwoods Park.
W. L. Miller, B.A., Ph.D., *Professor of Physical Chemistry.*	50 St. Albans St.
W. A. Parks, B.A., Ph.D., *Associate Professor of Geology.*	69 Albany Ave.
A. L. Parsons, B.A., *Lecturer in Mineralogy.*	384 Brunswick Ave.
J. Squair, B.A., *Professor of French.*	61 Major St.

R. B. THOMSON, B.A., *Lecturer in Botany.*	Forestry Building.
T. L. WALKER, M.A., PH.D., *Professor of Mineralogy and Petrography.*	62 Maple Ave.
R. RAMSAY WRIGHT, B.A.SC., M.A., LL.D., *Professor of Biology.*	Lonsdale Ave.

Sessional Appointments.

P. BALBAUD, B. ÉS L., *Lecturer in French.*	626 Huron St.
MISS A. BALL, B.A. *Fellow in Mathematics.*	418 Huron St.
S. BEATTY, M.A. *Fellow in Mathematics.*	91 Willcocks St.
W. R. BOCKING, B.A., *Fellow in Mathematics.*	308 Huron St.
SAINT-ELME DE CHAMP, *Lecturer in French.*	Dean's House.
W. F. GREEN, B.A., *Demonstrator in Mineralogy.*	2 Indian Grove.
A. G. HUNTSMAN, B.A., *Lecturer in Biology.*	239 Fern Ave.
F. J. MCDONALD, B.A. *Fellow in Mathematics.*	69 Maitland St,
T. L, TANTON, B.A. *Fellow in Geology*	76 Henry St.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

Historical Sketch.

The Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practice Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February, 1877.

By the scheme thus approved of, Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1889 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By the terms of this order the management and discipline of the School was vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degrees in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal, the Professors and Lecturers, together with the Registrar.

By the University Act, 1906, the School of Practical Science was united to the University of Toronto as its Faculty of Applied Science and Engineering.

GRADUATING DEPARTMENTS.

There are seven regular Departments of Instruction leading to the degree of Bachelor of Applied Science:—

1. Civil Engineering.
2. Mining Engineering.
3. Mechanical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.
7. Electrical Engineering.

The instruction given in these departments extends over a period of four years and is designed to give the student a thorough knowledge of the scientific principles underlying the practice in the several professions, and also such training as may make him immediately useful when he commences professional work.

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), or Chemical Engineer (Chem. E.), as the case may be, subject to the rules and regulations established by the University. (See page 72).

FELLOWSHIPS.

Fellowships of the value of $500 each, open to graduates, are offered annually in the various departments.

Applications for these fellowships are to be made annually in writing to the Secretary of the Faculty on or before the 1st day of May.

SCHOLARSHIP.

The Boiler Inspection and Insurance Company of Canada offers a Scholarship in the Department of Mechanical Engineering of the value of $130.00 to the student who obtains highest Honour Standing in the regular examinations of the third year.

The successful candidate will be expected to proceed to his fourth year during the session next following the date of the award.

The amount of the award will be credited by the Bursar to the fees of the fourth year of the successful candidate.

Research Fellowship.

Two research Fellowships of the value of $500 each are offered annually by the Alumni Association of the Faculty of Applied Science and Engineering.

I. MATRICULATION.

1. The matriculation requirements of this Faculty are based upon those given in the curriculum for Junior Matriculation, a copy of which may be obtained on application.

2. A candidate for matriculation must produce satisfactory certificates of good character.

3. The subjects are as follows:

English, History, pass standing in Honour Mathematics and any three of the following, viz., Greek, Latin French, German, Experimental Science. In selecting the options it is recommended that students take French, German and Experimental Science. In the department of Architecture French is required, in Applied Chemistry and Chemical Engineering German is required and in Mechanical Engineering it is desirable that students take German.

4. The pass standard is forty per cent. of the marks assigned to a paper, with an average of sixty per cent.

5. A candidate who has obtained an average of sixty per cent. on all the papers but has failed to obtain forty per cent. in not more than two papers may complete matriculation by passing on these papers at any one subsequent examination.

6. Candidates who obtained, prior to 1910, pass standing in at least a majority of the subjects may complete Junior Matriculation by passing in the remaining subjects at a subsequent examination.

7. The examination for pass and honour Junior Matriculation is held annually in June at centres in Ontario, and, if application is made to the Senate, the examination may, with the co-operation of the Department of Education, be held at centres outside Ontario.

8. Applications accompanied by the fee of $5.00 must be sent not later than the 15th of May to the local Public School Inspector, or in the case of candidates intending to write at the University, to the Registrar.

9. A Junior Matriculation examination, at which no honour papers are set, will be held in September at the University and at such other centres as may from time to time be authorized. Candidates entitled to the privileges of supplemental examinations as well as new candidates, may present themselves at this examination.

10. Applications to write on the September examination, together with the necessary fee, must be received at the Department of Education not later than September 1, for those who wish to write at any centre established in Ontario, and not later than August 1 for any centre elsewhere in Canada.

11. Forms of application, the time-table of the September examination, and further particulars may be had upon application to the Department of Education.

II. ADMISSION.

A candidate for admission must have completed the seventeenth year of his age on or before the first of October of the year in which he seeks to enter.

Applications for admission must be made on blank forms supplied by the Registrar, and should be forwarded early in September.

Applications will be considered from (*a*) those who have completed matriculation, including those who hold certificates recognized as equivalent —see matriculation curriculum—, (*b*) those who have failed in not more than two papers of the matriculation examination. The latter must complete matriculation before being eligible to enter the second year.

Applications based upon other certificates than those mentioned will be considered as occasion may require. Such certificates must be accompanied by an official statement of the marks in the various subjects upon which the certificate was granted.

ADMISSION AD EUNDEM STATUM.

An undergraduate of another University may be admitted *ad eundem statum* on such conditions as the Senate on the recommendation of the Council of the Faculty may prescribe.

An applicant for admission *ad eundem statum* must submit with his petition (1) a calendar of his University giving a full statement of the courses of instruction; (2) an official certificate of character and academic standing.

III. REGISTRATION.

Registration in the various years will begin Sept. 1st. Blank cards for the purpose will be supplied by the Secretary on request.

IV. FEES.

All fees are payable at the Bursar's office between the hours 10 a.m. and 1 p.m. of each week day except Saturday.

The annual fees including tuition, library, laboratory supplies and one annual examination shall be as follows:—

First Year.

If paid in full on or before November 5th	$100.00
By instalments:	
First instalment, if paid on or before November 5th	50.00
Second instalment, if paid on or before February 5th	55.00

Second Year.

If paid in full on or before November 5th	110.00
By instalments:	
First instalment, if paid on or before November 5th	55.00
Second instalment, if paid on or before February 5th	60.00

Third and Fourth Years.

If paid in full on or before November 5th	120.00
By instalments:	
First instalment, if paid on or before November 5th	60.00
Second instalment, if paid on or before February 5th	65.00

Repeating the Year.

If paid in full on or before November 5th	50.00

The above fees are payable in advance. After November 5th a penalty of $1.00 per month will be imposed until the whole amount is paid. In the case of payment by instalments the same rule as to penalty will apply.

Students desiring to pay in instalments must have paid the fees due in the first term before proceeding to the work of the second term.

General Fees.

Matriculation, or registration of Matriculation	$5.00
Supplemental examination	10.00
Admission ad eundem statum	10.00
Degree of B.A.Sc. (Payable not later than April 1st)	10.00

Dues and Deposits.

(Payable to the Secretary of the Faculty at the time of registration.)

Engineering Society membership	$1.00
Annual deposit	2.00

Charges for waste, neglect and breakage are to be met out of the deposit fee, the balance of which will be refunded to the student at the end of the session.

GENERAL INFORMATION FOR STUDENTS.

Discipline.

The Council of University College, and the governing bodies of the federated universities and colleges, respectively, have disciplinary jurisdiction over and entire responsibility for the conduct of their students in respect of all matters arising or occurring in or upon their respective college buildings and grounds, including residences.

The councils of such of the faculties as have assigned for their separate use any building or buildings and grounds, including residences, have disciplinary jurisdiction over and entire responsibility for the conduct of all students in their respective faculties in respect of all matters arising or occurring in or upon such building, or building and grounds

In all such cases, and, save as aforesaid, as respects all students to whatsoever college or faculty they may belong, disciplinary jurisdiction is vested in the Caput, but the Caput may delegate its authority in any particular case or by any general regulation to the council or other governing body of the university or college or faculty to which the student belongs.

The Caput has also power and authority to determine by general regulations, or otherwise, to what college, faculty or other body the control of university associations belongs.

If there be any question as to the proper body to exercise jurisdiction in any matter of discipline which may arise, the same shall be determined by the Caput, whose decision shall be final.

Disciplinary jurisdiction includes the power to impose fines.

REGULATIONS RESPECTING STUDENTS.

No student will be enrolled in any year, or be allowed to continue in attendance ,whose presence for any cause is deemed by the Council to be prejudicial to the interests of the University.

All interference on the part of any student with the personal liberty of another, by arresting him, or summoning him to appear before any tribunal of students, or otherwise subjecting him to any indignity or personal violence, is forbidden by the Council. In particular, students of all Faculties are warned against the practices known as the "hustling" of freshmen and against inter-year or inter-faculty "hustles." Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

All students shall be in attendance during the whole of each term. Those whose attendance or work is reported as unsatisfactory are liable to dismissal by the Council.

No student will be allowed to repeat the work of any year more than once.

Information as to the text books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

OPTIONS.

In departments 1, 2, 3 and 7 of the first and second years, students have the option of taking either French or German. The selection made for the first year must be continued during the second year.

In department 1 of the third year in addition to the regular subjects, Biology will be required of those who intend to follow Sanitary work in the fourth year.

In department 5, second year an option is permitted between Biology and Calculus as the student, upon consultation with the head of the department in Chemistry, may decide.

In the fourth year, optional courses are arranged in certain departments. Students are required to submit their selection to the Secretary in writing, not later than September 15th. The proposed selection must be approved by Council before adoption.

REGULATIONS RESPECTING EXAMINATIONS.

Regular Examinations.

A student who in either term of the session, fails to perform the work of his course in a manner satisfactory to the professors in charge, will not be allowed to present himself at the final examinations of the year.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the Annual Examinations in April, notice in writing of their intention to take such examinations. A penalty of $1.00 will be imposed upon all candidates who fail to give notice within the proper time.

In the second, third and fourth years Annual Examinations will be held at the beginning of the second term on all subjects completed during the first term.

No student will be allowed to write at the Annual Examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examinations will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and one-half times the minimum required in the case of a written examination.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, electrical design, optics, surveying and architecture, the drawings set in these subjects must be made.

Candidates who fail in passing the Annual Examinations will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

Term Examinations.

In the first year only, term examinations in four subjects will be held on the last two days of the first term.

The subjects will not be announced until the day previous to the first examination.

The results of these examinations will be incorporated with those of the Annual Examinations in the same subjects in the ratio of 1 to 2.

Supplemental Examinations.

A candidate who fails in one or two subjects at the annual examinations, will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 18th of September, 1912.

Candidates are required to send to the Secretary of the Faculty at least two weeks before the commencement of the Supplemental Examinations in September, notice in writing of their intention to take such examinations, and to remit to the Bursar the fee of $10.00.

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

Vacation Work.

Vacation work must be handed in, on or before the first day of the session.

Vacation notes must be on construction only, except in Department 2 (see p. 72), and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be free-hand pencil drawings with figured dimensions.

Notes must be made in standard note books approved of by the Faculty. Notes which have been taken during the session in connection with the work in drawing will not count as vacation work.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

Shop Work.

Students in Mechanical and Electrical Engineering are not considered as having completed their course of study, nor are Degrees granted, until certificates have been submitted to the Council, and accepted as satisfactory, showing not less than eight months of mechanical experience in production of some kind under commercial conditions. Preferably the work undertaken should be in one of the manufacturing industries or trades with which the Course is related.

It is not desirable that any student in these Courses should enter sales or other non-production departments of the engineering industries without having acquired some personal experience in mechanical production. It is best to obtain this experience under commercial conditions. Otherwise one can not at all appreciate shop conditions and limitations.

Honours.

Honours will be granted in each department to the students who pass in all the subjects and obtain at least 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Papers read before the Engineering Society may be considered in granting Honours.

REGULATIONS RESPECTING TERM WORK.

Students working in any laboratory must be governed by the regulations relating thereto as made known from time to time.

No laboratory reports or drawings may be removed from the laboratories without permission. The Council reserves the right to dispose of them as may be thought proper.

Field Work.

No field notes will be counted which have not been taken in the field, and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

Drafting Rooms.

Drawings prescribed for the first term of the session will not be counted unless finished in that term.

The minimum number of drawings shall be twenty-five, and the maximum number thirty-five, except in the Department of Analytical and Applied Chemistry, in which the number shall be fifteen and twenty-five respectively.

No drawings will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

Theses.

In the Fourth Year each student is required to prepare a thesis on a subject approved by the Council. The title of the thesis must be sent to the Secretary of the Faculty for approval on or before November 1st, and the completed thesis must be handed in not later than the first day of the second term and shall become the property of the University. The rules governing size, form, etc., may be obtained on application to the Secretary.

EXEMPTIONS.

Applications for exemption from any of the regulations must be made to the Council in writing and the particulars of the case fully stated.

1. DEPARTMENT OF CIVIL ENGINEERING.

The courses of study in Civil Engineering are designed to give the student a sound training in the fundamental scientific principles on which the practice of the profession is based. The instruction is given by means of lectures and practical work in the field, the drafting room and the laboratory. In this way the student is led to apply the principles developed in the class room.

Formerly the term Civil Engineering included all the branches of the profession, but some of these became so extensive as to require distinctive names and fields of work for themselves. Even yet Civil Engineering is so comprehensive as to render it impossible for anyone to master all its branches. It may be said to include surveying and topography; works connected with transportation, such as railroads and canals; municipal works, such as waterworks, sewers, streets and pavements; hydraulic works, such as power development, drainage, irrigation, etc.; structural works, such as bridges, roofs, etc.

Notwithstanding the variety of the branches of Civil Engineering above enumerated, they are underlaid by a comparatively compact body of scientific principles which form the basis of the work of instruction. While the subjects of the first year are largely fundamental, an effort is made, to give a professional aspect to the student's work from the very beginning. This is accomplished by the introduction of such subjects as field work and plotting in the curriculum of the first year. In the second and third years the study of fundamental science is continued together with its application to the solution of engineering problems. In the fourth year the student may elect to follow certain optional subjects which form a continuation of the work of the previous years. Here special stress is laid upon experimental work in the laboratory.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Surveying	205–206	1	9	1	
Statics	10	2		2	
Dynamics	11	2		2	
Elementary Chemistry	75	2		2	
Modern Language	217–218	1		1	
Accounts	65	1		1	
Drawing	117		13		22

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Spherical Trigonometry	191	1			
Elementary Astronomy	55	1		1	
Descriptive Geometry	121	1		1	
Surveying	207–208	1	8	1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Mineralogy	159–161	2	1	2	
Banking & Finance	66	1		1	
Modern Language	217–218	1		1	
Drawing	123		12		16
Analytical Chemistry	81				6

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Least Squares	192			1	
Practical Astronomy	56				
& Geodesy	57	2		2	
Surveying and Levelling	209–210	1	8	1	
Descriptive Geometry	127	1			
Hydraulics	29–30	2		2	3
Photography	199	1	3		
Ferro-Metallurgy	181	1		1	
Theory of Structures	18	2		2	
Cements and Concrete	21			1	
Engineering Chemistry	94	1		1	
Geology	150	1		1	
Limited Companies	67	1		1	
Heat	198	1	1		
*Biology	61	2		2	
Drawing	128		8		19
Strength of Materials	14				1

Fourth Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Foundations	20	1	1	1	1
Electricity	140	1		1	
Thermodynamics	33	1	1	1	1
Geology	151	1		1	
Contracts and Specifications	68	1		1	
Thesis	219				
and one of					
(*a*) Astronomy	58	2	23	2	
(*a*) Geodesy	59	2		2	23
(*b*) Sanitary Engineering	213	1½	16	1½	16
(*b*) Highway Engineering	214	1½	6	1½	6
(*c*) Structural Engineering	215	7	22	5	24
or two of					
(*d*) Hydraulics	31–32	2	11	2	11
(*e*) Strength and Elasticity of Materials	16–17–22	3½	11	3½	11
(*f*) Railway Engineering	211–212	1½	11	1½	11

* Required only of those who propose to take Sanitary Engineering in the Fourth Year.

2. DEPARTMENT OF MINING ENGINEERING.

The course in Mining Engineering is intended to serve as a preliminary training for those who expect to practice the art of mining or metallurgy. In the first two years it differs very little from the course in civil engineering, in the third year some subjects peculiar to mining and metallurgy are taken up. In the fourth year the subjects are more particularly those of mining and metallurgy. By the choice of subjects for thesis in the fourth year the student can follow his particular branch still further, and devote about one-quarter of the time in that year to the part of the studies which interests him most.

In general this course is designed to first give the student a good training in the parts of engineering essential to all branches such as surveying, drafting, etc., and then in the upper years to allow him to follow studies peculiar to mining engineering.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least six months 'practical experience in work connected with mining, metallurgy or geology, for which they must have received regular wages. Certificate forms, giving full details as to acceptable classes of work, will be furnished on application and should be obtained by all students before entering employment.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Surveying	205–206	1	9	1	
Statics	10	2		2	
Dynamics	11	2		2	
Elementary Chemistry	75	2		2	3
Modern Languages	217–218	1		1	
Accounts	65	1		1	
Drawing	117		13		19

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Surveying	207–208	1	8	1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Optics	197	1	2		
Hydrostatics	196			1	1
Inorganic Chemistry	79	1			
Organic Chemistry	87	1			
Engineering Chemistry	85			1	
Analytical Chemistry	81–82		9		3
Mineralogy	159–161	1	1	1	3
Geology	150	1		1	
Mining	170–171			1	3
Metallurgy	178	1			
Modern Languages	217–218	1		1	
Banking and Finance	66	1		1	
Drawing	123		1		14

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Surveying and Levelling	209–210	1	9		
Theory of Structures	19	2			
Hydraulics	29	2		2	
Electricity	140	1		1	
Engineering Chemistry	94	1		1	
Analytical Chemistry	93	1	3	1	7
Assaying	173		3	1	3
Petrography	163	1	2	1	2
Economic Geology	151–156	2		2	2
Ore Deposits	155	1		1	
Mining	172	1	3	1	
Ore Dressing	182	1		1	
Ferro-Metallurgy	181	1		1	
Metallurgy (non-ferrous)	179	1		1	
Limited Companies	67	1		1	
Drawing	132				8

Fourth Year.

Thermodynamics	34	1		1	
Electrochemistry		1		1	
Assaying	174	1	3		
Petrography	166	1	2	2	2
Geology, Archaean and Glacial	152	2	1	2	
Geology, Mining	153	1		1	
Mining	175	1		1	
Ore Dressing	184	1		1	
Metallurgy	180	1	3	1	3
Cost-Keeping, etc	69	1		1	
Chemistry			6		6
Milling	176		3		3
Power	141		3		3
Design	215		3		3
Thesis			9		

3. DEPARTMENT OF MECHANICAL ENGINEERING.

The course in this Department is designed to meet the needs of those students who are intending to take up the work connected with Mechanical Engineering such as: the design of gas engines, steam engines, steam boilers, steam turbines, air compressors, etc.; the design and installation of the machinery connected with power plants and central stations, steam piping and other similar problems. The work is also so arranged that the student becomes somewhat familiar with the design of travelling cranes and mill buildings and similar problems connected with structural steel work.

Since the work of the mechanical engineer and of the electrical engineer are closely allied, the courses in these two departments in the first two years are identical and cover the subjects mentioned below.

In the third year the work becomes more specialized, the mechanical engineers paying more attention to heat engines of various types, and to mill building design and other work of similar nature. The study of electricity is continued and the student gets considerable practice in the mechanical and electrical laboratories.

In the fourth year the student devotes himself still more closely to his chosen work, placing the greater stress on thermodynamics and the theory and testing of heat engines, and problems in machine design. Much time is spent in the mechanical laboratories testing gas and steam engines and other machines. A portion of the time is devoted to electricity and the laboratory connected therewith.

Candidates for the degree in this department are required to present satisfactory evidence of having had at least eight months' practical experience in one of the principal trades connected with Mechanical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering, as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Magnetism and Electricity	135	2			
Electric Circuits	136			2	
Elementary Chemistry	75	2		2	
Drawing	120		20		20
Electricity	137		1½		1½
Modern Language	217–218	1		1	
Accounts	65	1		1	

Second Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Dynamics	12	1		1	
Theory of Mechanism	25	2		2	
Steam Engines	38	1			
Strength of Materials	13	2		2	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Electricity	138–139	2	2½	2	2½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Banking and Finance	66	1		1	
Modern Language	217–218	1		1	
Drawing	123		12		19
Mechanical Laboratory	38		1		1
Analytical Chemistry	81		6		

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Mechanics of Machinery	26	1		2	
Machine Design	27	1	7½	1	7½
Thermodynamics	33–35	2		2	3
Heat Engines	39	1		1	
Hydraulics	29–30	2	3	2	
Theory of Structures	19	2			
Ferro-Metallurgy	181	1		1	
Magnetism and Electricity	142	3	4½	1	4½
Alternating Current	143	1		1	
Engineering Chemistry	94	1		1	
Limited Companies	67	1		1	
Strength of Materials	15	2			
Drawing	132		3		3

Fourth Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Mill Building Design	24	1	3	1	3
Cost-Keeping, etc	69	1		1	
Machine Design	28	1	4	1	4
Thesis	215				
And two of					
(*d*) Hydraulics	32	2	10	2	10
(*e*) Strength of Materials	16	3½	10	3½	10
(*g*) Thermodynamics	36–37	3	10	3	10

4. DEPARTMENT OF ARCHITECTURE.

The instruction in this department is arranged to lay a broad foundation for the subsequent professional life of its graduates, and incidentally to prepare its students to be immediately useful in an architect's office. The curriculum has been arranged to meet the æsthetic and scientific needs of the profession, and includes History and Principles of Architecture, Freehand Drawing in pencil, ink and color, Architectural Design, Analysis and Criticism of Buildings, Mathematics, Statics, Strength and Elasticity of Materials, Theory of Construction and Heating and Ventilation.

The equipment of the department includes a working library of 1,000 volumes, a large file of periodicals, 2,500 photographs, 2,000 stereographic photos, 4,500 lantern slides, and a large collection of models and casts.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	1		1	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Building Measurement	49	1	9	1	
Statics	10	2		2	
Elementary Chemistry	75	2		2	
History and Principles of Architecture	40	1		1	
French	217	1		1	
Accounts	65	1		1	
Drawing	118		12		21
Architectural Sketching					
Modelling	54*a*		3		3

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Strength of Materials	13	2		2	
Engineering Chemistry	94	1		1	

Second Year.—Continued.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Optics	197	1	1½		
Hydrostatics	196			1	1½
Architectural Design	46	1		1	
History of Architecture	41	1		1	
Orders of Architecture	45	1		1	
History of Ornament	43	1		1	
French	217	1		1	
Banking and Finance	66	1		1	
Drawing Architectural Design Architectural Sketching	125		20		20
Modelling	54*a*		3		3

Third Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Vacation Work	220				
Descriptive Geometry	131	1		1	
Acoustics	195	1	3	1	
History of Architecture	42	1		1	
History and Principles of Ornament	44	1		1	
Architectural Design	47	1		1	
Building Materials	50	2		2	
Theory of Structures	19	2			
Cements and Concrete	21	1		1	
Limited Companies	67	1		1	
Drawing Architectural Sketching Architectural Design	130		16		22
Strength of Materials	15		1		1
Photography	199	1	3		
Modelling	54*a*		2		2

Fourth Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Strength of Materials	17		6		6
Electricity	146	1		1	
Heating and Ventilation	53	1		1	
Sanitary Science	52	1		1	
Contracts and Specifications	54	1		1	
Thesis	215		3		3
And one of					
(*l*) Architectural Design	48	2	20	2	20
(*m*) Architectural Engeer'ing	216	4	22	3	26

5. DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY.

The course in Analytical and Applied Chemistry is designed to furnish instruction suitable for those students who intend to practice chemistry as a profession, either as analysts or as works chemists.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Electricity and Magnetism	135	1		1	
Biology	61–63	2	3	2	3
Accounts	65	1		1	
Electric Circuits	136	1		1	
Elementary Chemistry	75	2		2	
Elementary Mineralogy	157	2			
German	218	1		1	
Drawing	119		4		4
Electricity	137		1		
Chemistry	78		10		14
Mineralogy	158		4		3
Inorganic Chemistry	77	1		1	

Second Year.

Electricity	138–139	2	2½		2½
Engineering Chemistry	85			1	
Industrial Chemistry	86	1		1	
Organic Chemistry	88	2		2	
Physical Chemistry	90	2		2	
Inorganic Chemistry	79	1			
Analytical Chemistry	80	1		1	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Geology	150	1		1	
*Biology or	62	1	3	1	3
Calculus	190	2		2	
German	218	1		1	
Banking and Finance	66	1		1	
Chemistry	89		15		16
Metallurgy	178			1	
Mineralogy	162				1

*Students should consult the head of the department of Chemistry as to the option to be selected.

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Electrochemistry	101–102	1	3	1	
Engineering Chemistry	94	1		1	
Industrial Chemistry	95	1		1	
Organic Chemistry A	97	2		2	
Organic Chemistry B	98			1	
Chemical Plant	96	1		1	
Ferro-Metallurgy	181	1		1	
Metallurgy	179	1		1	
Economic Geology	151	2		2	
Crystallography	167	1		1	
Limited Companies	67	1		1	
German	218	1		1	
Chemistry	91		16		23
Assaying	173		3		
Heat	198	1	1½		
Electricity	140			1	

Fourth Year.

Inorganic Chemistry	103	1		1	
Organic Chemistry	104	1		1	
Cost-Keeping, etc	69	1		1	
Power	141		2		2
German	218	1		1	
Thesis	215				
And one of					
(*h*) Electrochemistry	108–109	2	28	2	28
(*i*) Industrial Chemistry	106–107	1	29	1	29
(*j*) Sanitary and Forensic Chemistry and Bacteriology	110–112	1	29	1	29
(*k*) Metallurgical Chemistry	180	2	28		28

6. DEPARTMENT OF CHEMICAL ENGINEERING.

In many industries there is a demand for a man who combines the technical knowledge of the mechanical engineer with a knowledge of chemistry. It is to fill this want that the course in Chemical Engineering is designed.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Electric Circuits	136			2	
Elementary Chemistry	75	2		2	
Inorganic Chemistry	77	1		1	
German	218	1		1	
Accounts	65	1		1	
Drawing	120		17		19
Electricity	137		1½		1½
Chemistry	78		3		

Second Year.

Subject	No.	First Term Lect.	First Term Lab'y	Second Term Lect.	Second Term Lab'y
Vacation Work	220				
Calculus	190	2		2	
Strength of Materials	13	2		2	
Electricity	138–139	2	2½	2	2½
Engineering Chemistry	85			1	
Industrial Chemistry	86	1		1	
Organic Chemistry	88	1			
Physical Chemistry	90	2		2	
Inorganic Chemistry	79	1			
Optics	197	1	1½		
Hydrostatics	196			1	1½
German	218	1		1	
Banking and Finance	66	1		1	
Drawing	123		13		14
Chemistry	84		6		6
Metallurgy	178			1	

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Theory of Structures	19	2			
Thermodynamics	33	2		2	
Electrochemistry	101–102	2	3		
Engineering Chemistry	94	1		1	
Organic Chemistry A	97	2		2	
Organic Chemistry B	98			1	
Industrial Chemistry	95	1		1	
Analytical Chemistry	92	1	11	1	12
Metallurgy	179	1		1	
Ferro-Metallurgy	181	1		1	
Chemical Plant	96	1		1	
Limited Companies	67	1		1	
German	218	1		1	
Machine Design	27	1	4½	1	4½
Drawing	132		2		
Assaying	173				3
Mechanical Laboratory					3
Electricity	140			1	

Fourth Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Hydraulics	29		2	2	3
Inorganic Chemistry	103	1		1	
Organic Chemistry	104	1		1	
Cost-Keeping etc	69	1		1	
Power	141		2		2
German	218	1		1	
Thesis	215				
And one of					
(*h*) Electrochemistry	108	2		2	
(*i*) Industrial Chemistry	106–107	1		1	
(*j*) Sanitary and Forensic Chemistry and Bacteriology	110–112	1		1	
(*k*) Metallurgical Chemistry	180	2	25		23

7. DEPARTMENT OF ELECTRICAL ENGINEERING.

The course in Electrical Engineering is arranged to provide preliminary training for those who would follow any of the various lines of activity connected with electrical industry.

The first two years of the course are devoted to fundamental scientific principles, and incidentally more or less of their application to engineering problems in mechanical, civil, and electrical work. Many problems are solved in the drafting rooms by graphical methods. The third year includes further theoretical work, more particular attention being given to electrical and mechanical studies in theory, operation, and design. The fourth year is devoted to advanced work in alternating current theory and practise combinedwith similar study in thermodynamics or hydraulics.

A large amount of laboratory practise is provided, most of which belongs to the third and fourth years. In this last year most of the time is spent in laboratory investigations and studies resulting therefrom.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' mechanical experience in one of the principal trades connected with Electrical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSTRUCTION.

First Year.

Subject.	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Magnetism and Electricity	135	2			
Electric Circuits	136			2	
Chemistry	75	2		2	
Modern Language	217–218	1		1	
Accounts	65	1		1	
Drawing	120		20		20
Electricity	137		1½		1½

Second Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Theory of Mechanism	25	2		2	
Steam Engines	38	1			
Electricity	138–139	2	2½	2	2½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Modern Language	217–218	1		1	
Banking and Finance	66	1		1	
Drawing	124		12		19
Chemistry	81		6		
Third Year.					
Vacation Work	220				
Mechanics of Machinery	26	1		2	
Machine Design	27	1	3¼	1	3¼
Hydraulics	29–30	2	3	2	
Thermodynamics	33–35	2		2	3
Heat Engines	39	1		1	
Electrochemistry	101–102	2	3		
Magnetism and Electricity	142	3		1	
Alternating Current	143	1		1	
Electrical Design	145	1	1½	2	3
Electrical Laboratory	144		6		6
Engineering Chemistry	94	1		1	
Ferro-Metallurgy	181	1		1	
Limited Companies	67	1		1	
Fourth Year.					
Applied Electricity	146–147	3	18	3	18
Cost-Keeping etc	69	1		1	
Thesis	215				
And one of					
(*d*) Hydraulics	31–32	3	10	3	10
(*g*) Thermodynamics	36–37	3	10	3	10
(*h*) Electrochemistry	108–109	3	10	3	10

OUTLINE OF COURSES OF INSTRUCTION.

APPLIED MECHANICS.

10. STATICS:—Departments 1, 2, 3, 4, 6 and 7, I Year; 2 hours per week; both terms.

This course of lectures deals with forces in a single plane, and concerns chiefly the calculation of tension, compression and shearing stresses in frame structures and solid beams. It also deals with the consideration of problems relating to friction.

11. DYNAMICS:—Departments 1, 2, 3, 4, 6 and 7, I Year; 2 hours per week; both terms.

Kinematics and dynamics of rigid bodies, motion of translation, acceleration, graphics, the laws of motion, impulse and momentum, work and energy, power of pumps, etc.

Text book:—Tutorial Dynamics—Briggs and Bryan.

12. DYNAMICS OF ROTATION:—Departments 1, 2, 3, 6 and 7, II Year; 1 hour per week; both terms.

Angular motion, velocity and acceleration, moment of inertia, simple harmonic motion, the pendulum, centres of mass, suspension and percussion, the phenomena of rotating bodies with special reference to such as fly wheels, governors, etc.

Text book:—Dynamics of Rotation—Worthington.

13. STRENGTH OF MATERIALS:—Departments 1, 2, 3, 4, 6 and 7, II Year; 2 hours per week; both terms.

In this course, the strength and elasticity of materials are mathematically treated. The stresses in such elements of struc tures as the tie rod, the beam, the strut and the member subjected to shear are investigated and the elementary principles of design established. In the lecture and drafting rooms through numerous problems involving the design of simple beams, columns, rivetted connections, etc., these principles are exemplified. The work includes also the discussion of eccentric loading, suddenly applied loads and repeated stresses.

Reference Book:—Mechanics of Materials, Merriman.

14. STRENGTH AND ELASTICITY OF MATERIALS:—Departments 1, 3 and 4, III Year; 1 hour per week; one term.

This course is intended to give the student an introduction to the experimental study of the strength and elasticity of materials. It is intended that he shall acquire some familiarity with the construction and operation of testing machines and with the properties of the ordinary building materials.

Reference Book:—Laboratory Instructions, Department of Applied Mechanics U. of T. 1911.

16. THEORY OF STRUCTURES:—Departments 1, and 3, IV Year; 2 hours per week; both terms.

The work taken up in this course of lectures consists in swing bridges, arches, suspension bridges and some special features in column construction. Some examples of the above structures will be designed in the class and carried out in further detail in the drafting room.

Reference Book:—Modern Framed Structures—Johnson.

17. STRENGTH AND ELASTICITY OF MATERIALS :—Departments 1, 3 and 4, IV Year; a laboratory course of about 11 hours per week.

This course of experiments is intended to give the student practice in investigating the elastic and physical properties of iron, steel, concrete, timber and other building materials.

Reference Book:—Materials of Construction—Johnson.

18. THEORY OF STRUCTURES:—Department 1, III Year; 2 hours per week; both terms.

In the first term, the theory relating to the design of box and plate girders is covered fully, and the complete design of a plate girder span is worked out in the class and drafting rooms.

The second term is given chiefly to the design of a riveted truss highway span and a rivetted truss railway span, the complete designs being made in the lecture and drafting rooms. Restrained, continuous and trussed beams complete the term's work.

19. THEORY OF STRUCTURES:—Departments 2, 3, 4, and 6, III Year; 2 hours per week; first term.

The work is practically the same as that for Department 1 in the first term except that a building girder is designed instead of a plate girder bridge span, and that restrained, continuous and trussed beams are discussed at the end of the term.

Text books:—Modern Framed Structures—Johnson, Bryan and Turneaure; Roofs and Bridges, Part III, Bridge Design—Merriman and Jacoby; Carnegie Pocket Companion; Cambria Steel.

20. FOUNDATIONS, RETAINING WALLS AND DAMS.

Required in Department 1, IV Year; 1 hour per week; both terms.

This course of lectures is devoted to the design of the structures mentioned. Preparatory to the discussion of the practical aspects of the subject, and in order to gain familiarity with the fundamental principles involved, a part of the first term is given over to the consideration of the theory of compound stress. The most approved forms of construction of retaining walls, footings, abutments, piers and dams are then described, and typical designs are worked out in the class and drafting rooms.

Text books and books of reference:—Retaining Walls for Earth—M. A. Howe; Walls, Bins and Grain Elevators—M. S. Ketchum; A Treatise on Masonry Construction—I. O. Baker; Design and Construction of Dams—E. Wegmann.

21. CEMENTS AND CONCRETE :—Departments 1 and 4; III Year; 1 hour per week; second term.

The manufacture, testing and use of Portland Cement, and the elementary theory of reinforced concrete are discussed in this course of lectures.

22. REINFORCED CONCRETE:—Departments 1 and 4, IV Year; 1 hour per week.

The theory of the strength of reinforced concrete elements including the beam, the slab, the T-beam and the column, is continued in this course.

The analysis of the monolithic arch by the elastic theory is discussed and the student is required in the drafting room to apply his knowledge to the design of simple structures.

Reference books:—Principles of Reinforced Concrete Construction—Turneaure and Maurer; Concrete, Plain and Reinforced,—Taylor and Thompson.

23. STEEL AND IRON.

Optional in Year IV.

In this course of lectures are discussed the relations between the composition of steels and irons and their physical properties. The effects of heat treatment and the constitution and structure as revealed by the microscope, are studied. The subjects taken up in Year III. are continued.

24. MILL BUILDING DESIGN:—Departments 1 (*Structural Engineering Option*), 3 and 4 (*Architectural Engineering Option*), IV Year; 1 hour per week; both terms.

The structural problems involved in the design of steel mill buildings are discussed in this course of lectures. Types of buildings, various styles of trusses, columns and details are described and the complete design of a steel mill building is worked out in the class and drafting rooms.

Text book:—Mill Building Design—Milo S. Ketchum.

MACHINERY.

25. THEORY OF MECHANISM:—Departments 3 and 7, II Year; 2 hours per week; both terms.

This course of lectures treats of the motions of machines, the latter being assumed to be of sufficient strength to resist acting forces. The formation of machines is dealt with in a general way and investigations of the velocities of points and links are made. The design of gear teeth and the application of trains of gears are taken up, also problems in static equilibrium.

Problems are worked out in the drafting room in which the methods given are employed.

26. MECHANICS OF MACHINERY:—Departments 3 and 7, III Year; 3 hours per week; one term.

In this course the questions dealt with are the construction of acceleration diagrams, the determination of the accelerations of various parts of machines, the kinetic energy of machines, the effect of the weights and accelerations of parts on the velocity of the flywheel and the proper weight of the latter to fulfil given conditions. The theory of various forms of governors is also fully taken up and the efficiency of machines. The discussion of the design of slide valves and gears is continued in this course.

Text books:—Slide Valve Gears—Halsey.

27. MACHINE DESIGN:—Departments 3, 6. 7, III Year; 1 hour per week; both terms.

The lectures in this course deal principally with the applications of the principles of kinematics and the theory of the strength of materials to the design of machine parts, such as shafting, gearing, journals, clutches, etc.

In addition to the lecture course a considerable amount of time is spent in the drafting room where designs involving the above principles are worked out and the necessary calculations made. These designs are made as parts of some actual machine, such as an engine.

28. MACHINE DESIGN:—Department 3, IV Year.

The lectures and practical work in this course are meant to supplemental those of course 25 and deal with more difficult problems and designs. The design of a complete machine is taken up and detail drawings as well as an assembly drawing are made.

HYDRAULICS.

29. HYDRAULICS—GENERAL COURSE:—Departments 1, 2, 3 and 7, III Year; Department 6, IV Year; 2 hours per week.

This is an introductory course of lectures in hydraulics and is devoted to the development and discussion of fundamental formulæ relating to the flow of water in pipes, the measurement of discharge by various methods, such as orifice and weirs, the conditions of flow obtaining in open channels, artificial and natural, and in pipes flowing partially full; together with other kindred subjects.

The object of this course is to provide the student with a good working knowledge of the fundamental principle of hydraulics; such as is useful in practical work, and is necessary to the intelligent investigation of more advanced problems, such as the design of turbines, water wheels and power plants generally.

30. HYDRAULIC LABORATORY:—Departments 1, 2. 3 and 7, III Year; 3 hours per week; one term.

The work in this course is intended to illustrate the lecture course given in hydraulics and to give the student some working acquaintance with the formulas and coefficients met with in practice. Experiments are made on the coefficients of velocity and discharge for orifices of different shapes and sizes and for weirs. The coefficients obtained are used with orifices and weirs in measuring the discharge through meters, nozzles, etc., which are next under examination. Experiments on the friction of water in pipes and fire hose and in elbows and bends are also made, and the friction factors and coefficients of friction are determined.

31. HYDRAULICS:—Departments 1, 3 and 7, IV Year; 2 hours per week; both terms.

Following up the third year course in this subject the theory already acquired is applied to the solution of problems connected with branched pipes, water mains discharging at various points along their length, the effect of a dam on the water level at any point on a stream and numerous other problems.

The most important question considered and to which most of the lectures are devoted is the theory of turbines and centrifugal pumps, the effect of the design on the speed, discharge, power and efficiency being fully taken up.

Text books:—Hydraulic Motors, etc.—Bodmer; Centrifugal Pumps—Innes; Hydraulics—Merriman.

32. HYDRAULICS:—Departments 1, 3 and 7, IV Year; about 11 hours per week.

A laboratory course devoted to experimental work on turbines of various types and centrifugal and turbine pumps and other similar devices. This experimental work is arranged to illustrate the lectures on turbine and pump design. The experiments are made on two large turbine pumps used in the laboratory supply, as well as on apparatus specially designed for instruction.

Various methods of measuring water power and the efficiency of machines are also given.

32a. POWER:—Departments 2 and 6, IV Year.

A laboratory course of six experiments on pumps, turbines, weirs, orifices, etc.

HEAT ENGINES.

33. THERMODYNAMICS:—Departments 3, 6 and 7, III Year; Department, 1, IV Year; about 2 hours per week.

A lecture and laboratory course in which the subject is treated in such a way as to make it of practical value and give a working acquaintance with the principles on which it is based. After the elementary ideas have been given and the proofs of the properties of Carnot's cycle, applications of the subject are made to the perfect gas and to saturated steam and to the various types of engines. Temperatures are taken from the air thermometer.

34. THERMODYNAMICS:—Department 2, IV Year; 1 lecture per week; both terms.

This course is especially designed to give the Mining Engineer a working knowledge of thermodynamics as applied to the perfect gas so that he will be able to understand clearly the action of air compressors, etc. After deducing general principles, the efficiency of compressed air transmission and the relative merits of different types of compressors is discussed.

35. **THERMODYNAMIC AND MECHANICAL LABORATORY**:—Departments 3 and 7, III Year; 3 hours per week; second term.

This laboratory course is designed to assist in a clearer understanding of thermodynamics, machine design and mechanics of machinery. The work in thermodynamics consists in the setting of slide valves, indicating engines measuring the brake horse power, simple engine and boiler tests and the testing of gas and gasoline engines under various conditions. The mechanical laboratory work deals with the efficiency of belts and ropes as well as of several machines of simple construction. An examination of lubricating oils is also made by means of oil testing machines and other well-known devices. Experiments are also made on the balancing of reciprocating and rotating masses.

36. **THERMODYNAMICS**:—Departments 3 and 7, IV Year; about 3 hours per week; both terms.

This is a continuation of the introductory course, the subject being here treated from a general standpoint and the idea of entropy and of the absolute scale of temperatures being introduced. The course includes the treatment of saturated and superheated vapours, gases, the flow of fluids, chimney and boiler efficiency and the theory of various engines and other appliances including air compressors, refrigerating machines, injectors and the various forms of link motions and radial valve gears.

Text books:—Thermodynamics—Peabody; Steam Tables—Peabody.

37. **THERMODYNAMICS**:—Departments 3 and 7, IV Year; about 10 hours per week.

The work in this year is a continuation and extension of the work covered in the third year laboratory course. Careful tests are made of engines of various types such as simple, tandem, and cross-compound steam engines; steam turbines; refrigerating machines; air engine; injectors and steam pumps, etc.; and an application is made of Hirn's Analysis and the entropy diagram to the results obtained. A complete set of experiments is made on each machine and the result plotted so as to show clearly to the student the effect of various alterations in the adjustment of the engine on the resulting efficiency.

Several modern gas and gasoline engines and a gas producer give ample opportunity for the study of this type of engine, and facilities are provided for sampling the gas supply and exhaust

Two experimental stacks and three boilers enable results to be obtained on boiler efficiency and chimney draft.

38. STEAM ENGINES:—Departments 3 and 7, II Year; one hour per week; one term.

This course of lectures includes a discussion of the principles of action of the steam engine; also the theory and design of various simple froms of valve gears used in the operation of such engines.

A short course is given in the mechanical laboratories in connection with the above lectures which illustrates the principles of valves and valve gears.

39. HEAT ENGINES:—Departments 3, 6 and 7, III Year; one hour per week, both terms.

This course in heat engines is intended for students in Mechanical Engineering, to be supplementary to the general course of lectures in thermodynamics given in the third year.

The principal commercial forms of heat engines are dealt with in a more or less descriptive manner; special attention is given to considerations affecting the design of the ordinary forms of steam engines, gas engines and oil engines.

39a. POWER.—Departments 2 and 6, IV Year.

A course of six experiments with steam and gas engines, compressed air, etc.

ARCHITECTURE.

40. HISTORY OF ARCHITECTURE:—Department 4, I Year; one hour per week; both terms.

In this course the development of architecture is treated very briefly and in an elementary manner, from the Pyramids of Egypt to the present, laying special emphasis on the Egyptian, Grecian and Western Asiatic work. The antique Greek and Roman orders are studied and the students are required to make rendered drawings in the studio of certain orders and elements. An attempt is made to develop the student's sense of proportion and in the latter part of the second term he is required to study a simple problem in design.

41. HISTORY OF ARCHITECTURE:—Department 4, II Year; one hour per week; both terms.

The Classical, Early Christian, Byzantine and Romanesque styles of architecture are studied with the aid of the lantern. The student is required to become acquainted with the best examples in these styles in order that his sense of proportion and his taste may be developed and his knowledge of the different elements extended.

42. HISTORY OF ARCHITECTURE:—Department 4, III Year; one hour per week; both terms.

In this course the work of the previous year is continued, with the study of Gothic and the Renaissance.

43. HISTORY OF ORNAMENT:—Department 4, II Year; one hour per week;. both terms.

In this course the development of Ornament is traced from the beginning through Egyptian, Assyrian, Grecian, Roman, Byzantine, Romanesque and Moresque styles. An attempt is made to analyze ornament of the best periods and to systematize the principles followed in form and color. The development and types of mouldings are also studied.

44. HISTORY OF ORNAMENT:—Department 4, III Year; one hour per week; both terms.

A continuation of the course in Ornament given to the Second Year. Instruction is given in lectures with the aid of the stereoptican. The students are required to become familiar with the characteristics and forms of the ornament used in the Gothic and Renaissance styles.

45. ORDERS OF ARCHITECTURE:—Department 4, II Year; one hour per week; both terms.

Lectures on the Five Orders of Architecture, their affiliated forms and the other elements used in design. Simple problems in elementary design involving the use of the orders and other elements are set from time to time.

46. ARCHITECTURAL DESIGN:—Department 4, II Year; one hour per week; both terms.

This course is given by means of individual instruction in the class room by criticisms of the solutions of different problems set during the year and by a series of lectures. It is in this course that the student begins the serious study of design; continued practice in architectural drawing and rendering afford the training necessary to make the student a proficient draughtsman.

47. ARCHITECTURAL DESIGN:—Department 4, III Year.

Theory and practice of Design.

This course is given by individual instruction in the studio and by lectures. The greater part of the course is devoted to problems in design and forms a continuation of the course given in the preceding year.

48. ARCHITECTURAL DESIGN:—Department 4, IV Year.

The entire course is devoted to advanced academic training in designing the more monumental classes of buildings. The student is required to design and submit sketches and working drawings of some subject to be selected by himself.

48A. ARCHITECTURAL DESIGN:—Department 4, IV Year; Architectural Engineering Option.

A short course of lectures and studio work referring especially to the artistic side of the design of commercial buildings.

49. BUILDING MEASUREMENT:—Department 4, I Year; 1 hour per week; both terms.

In this course of lectures the principles of measurements and mensuration with special reference to buildings will be discussed. With this is combined 4½ hours per week practice in measurements of existing buildings, quantities, etc.

50. BUILDING MATERIALS:—Department 4, III Year; 2 hours per week; both terms.

The structural and aesthetic value of the various building materials.

51. STRUCTURAL DESIGN OF BUILDINGS:—Departments 1 (*Structural Engineering Option*), and 4 (*Architectural Engineering Option*); IV Year; 2 hours per week first term; and one hour per week second term.

The structural features of buildings of timber, steel and reinforced concrete construction are thoroughly discussed in this course of lectures. In the first term, detailed attention is given to the design of ordinary floor slabs and arches, beams, girders, columns and footings. The second term is devoted to irregular framing, eccentrically loaded columns, special footings, deep foundations, wind bracing and the more unusual problems of structural practice. In both terms, portions of typical buildings are designed in the class and drafting rooms.

51A. STRUCTURAL DESIGN OF BUILDINGS:—Department 4, IV Year; two hours per week; first term.

This course is the same as that given in the first term to Department 1, Structural Engineering Option and Department 4, Architectural Engineering Option.

Text books:—Architectural Engineering—J. K. Freitag; Steel Construction—E. A. Tucker, Carnegie Pocket Companion; Cambria Steel.

52. SANITARY SCIENCE:—Department 4, IV Year; 1 hour per week; both terms.

Modern plumbing, its design and installation.

53. HEATING AND VENTILATION:—Department 4, IV Year; 1 hour per week; both terms.

The design of different systems, where they should be used, heating specifications, etc.

54. MODELLING:—Department 4, I, II, III and IV Years.

ASTRONOMY AND GEODESY.

55. ASTRONOMY, ELEMENTARY:—Department 1, II Year; 1 hour per week; both terms.

A course in descriptive Astronomy, explaining the ordinary astronomical terms, and describing the various celestial bodies and their motions. In the evenings opportunity will be given for identifying the stars and for observing with telescopes.

Text book:—Introduction to Astronomy—F. R. Moulton.

56. ASTRONOMY AND GEODESY:—Department 1, III Year; 2 hours per week.

The course of lectures deals with the determination of time, latitude, longitude and azimuth, by methods adapted to the use of the surveyor's transit and the sextant. It is designed to fulfil the requirements of the final examinations for Ontario and Dominion Land Surveyors.

In Geodesy an account is given of the principles and methods of a secondary triangulation survey, also of the principles involved in the North-West system of survey.

Text book:—Practical Astronomy as applied to Geodesy and Navigation, Doolittle; Nautical Almanac, 1913.

57. FIELD WORK:—Department 1, III Year; about 1 hour per week; first term.

The practical work in this subject comprises observations in the field with the transit and sextant for the determination of time, latitude and azimuth by the methods described in the lectures.

58. ASTRONOMY (Advanced):—Department 1, IV Year; 2 hours per week.

The lecture course in this subject comprises the theory and adjustment of the instruments used in connection with a geodetic survey; the methods of taking and reducing observations for time, longitude, latitude, and azimuth, with the precision required on such a survey; and other matters relating to these subjects.

59. GEODESY AND METROLOGY:—Department 1, IV Year; 2 hours per week.

The lecture course includes a description of the methods of measuring base lines, and the angles of a triangulation; the geometry of the spheroid with applications to geodetic problems; the computation of geodetic positions; the solution of large triangles on the earth's surface, and the adjustment of a triangulation; trigonometric and precise spirit levelling; the determination of the figure of the earth by arc measurements, and by the pendulum; the theory of map projections, etc.

60. ASTRONOMY, GEODESY AND METROLOGY:—Department 1, IV Year; about 23 hours per week.

The practical work in the above subjects includes the observation of meridian transits for time and longitude determinations, and of prime vertical transits for latitude, with the astronomical transit instrument; the observation of meridian zenith distances of stars, and of azimuths at elongation for latitude, with the alt-azimuth; theodolite observations for azimuth; observations for latitude with the zenith telescope; the investigation of the constants of the instruments used, and the reduction of all observations; the measurement of a base line with the steel tape, and the determination of the constants of the tape; the measurement of the angles of a triangulation and the adjustment of the angles of a network of triangles, etc.

BIOLOGY.

61. ELEMENTARY BIOLOGY:—Department 5, I Year; optional in Department 1, III Year; 2 hours per week; both terms.

A course of two lectures a week throughout the session is designed as an introduction of the whole range of biological studies. After a sketch of the scope and objects of these, the lectures will treat (*a*) of the fundamental principles of biology, as illustrated by the simplest animals and plants; (*b*) of typical forms of higher plants in ascending order; (*c*) of typical forms of animals in a similar way; and (*d*) of the structure and functions of the human body. Students are recommended to make use of the Biological Museum in connection with this course of lectures. For reference; Jeffrey Parker, Elementary Biology; Ramsay Wright, High School Zoology; Atkinson, Elementary Botany; Huxley, Lessons in Elementary Physiology.

62. ELEMENTARY BIOLOGY:—Department 5, I Year; 3 hours per week; both terms.

An elementary course of laboratory work on the general structure and identification of plants and animals, and the use of the microscope in the examination of tissues and products.

63. ADVANCED BIOLOGY:—Department 5, II Year.

A course of instruction in the Morphology and Physiology of Bacteria, Moulds and Yeast Fungi.

64. BACTERIOLOGY:—Departments 5 and 6, IV Year; a lecture and laboratory course of 8 hours per week; second term, on elementary bacteriology.

BUSINESS.

65. ACCOUNTING:—All Departments, I Year; 1 hour per week; both terms.

The principles of accounting; illustrated by typical accounts.

66. BANKING AND FINANCE:—All Departments, II Year; 1 hour per week; both terms.

Money and the instruments of credit; bond issues, loans, sinking funds, etc.

67. LIMITED COMPANIES:—All Departments, III Year; 1 hour per week; both terms.

Partnerships; the history and development of the limited liability company; the Companies Acts; Company finance.

68. CONTRACTS AND SPECIFICATIONS:—Departments 1 and 4, IV Year; 1 hour per week; both terms.

This course of lectures deals with the fundamental principles of contract and specification writing. The critical examination of typical specifications and agreements by the class forms an essential feature of the instruction.

69. COST-KEEPING, ETC.:—Departments 2, 3, 5, 6, and 7, IV Year.

Works management, accounts, analysis of costs, reports.

CHEMISTRY.

75. ELEMENTARY CHEMISTRY:—All Departments I Year; 2 hours per week; both terms.

A lecture course in elementary chemistry dealing with the metals and non-metals with experimental illustrations.

76. ELEMENTARY CHEMISTRY:—Departments 2 and 6, I Year; 3 hours per week; second term.

A laboratory course to illustrate the use of the sensitive balance, to verify some of the laws which form the basis of the science, and to serve as an introduction to quantitative laboratory methods. Instruction given as required before each period.

77. INORGANIC CHEMISTRY:—Departments 5 and 6, I Year ; 1 hour per week; both terms.

A lecture course on the elements and important inorganic compounds, supplementing course 75.

Text book:—Introduction to General Inorganic Chemistry—Alex. Smith.

78. INORGANIC CHEMISTRY:—Department 5, I Year; about 17 hours per week; both terms.

A laboratory course of quantitative experiments illustrating the use of the sensitive balance, and confirming the fundamental laws of chemistry; qualitative inorganic analysis; quantitative analysis of pure salts; inorganic preparations; molar weight determinations.

Text book:—Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

79. INORGANIC CHEMISTRY:—Departments 2, 5 and 6, II Year; 1 hour per week; first term.

A lecture course on the chemistry of the metals; a continuation of course 75.

80. ANALYTICAL CHEMISTRY:—Department 5, II Year; Departments 2 and 6, III Year; 1 hour per week; both terms.

A lecture course on the principles of chemical analysis; select gravimetric and volumetric methods; technical analysis.

81. ANALYTICAL CHEMISTRY:—Departments 1, 2, 3 and 7, II Year; 6 hours per week; one term.

Laboratory practice in elementary qualitative and quantitative analysis.

Text book:—A Smaller Chemical Analysis—Newth.

82. ANALYTICAL CHEMISTRY:—Department 2, II Year; 3 hours per week; both terms.

A laboratory course in the gravimetric determination of metals and acids, with elementary volumetric analysis.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

83. ANALYTICAL CHEMISTRY:—Department 5, II Year; 14 hours per week; 17 weeks.

A laboratory course comprising gravimetric and volumetric methods, acidimetry and alkalimetry.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

84. ANALYTICAL CHEMISTRY:—Department 6, II Year; 6 hours per week; both terms.

A laboratory course in qualitative and elementary quantitative chemical analysis; inorganic preparations.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

85. ENGINEERING CHEMISTRY:—Departments 1, 2, 3, 5, 6 and 7, II Year; 1 hour per week; second term.

A lecture course consisting of a study of the industrial production and application of heat and light, and of the chemistry of fuel and the products of combustion.

86. INDUSTRIAL CHEMISTRY:—Departments 5 and 6, II Year; 1 hour per week; both terms.

A lecture course on the manufacture of salts, acids, alkalies and inorganic chemicals.

Text book:—Inorganic Chemistry—Thorp.

87. ORGANIC CHEMISTRY:—Departments 1, 2, 3 and 7, II Year; 1 hour per week; first term.

A lecture course in elementary organic chemistry.

Text book:—Theoretical Organic Chemistry—Cohen.

88. ORGANIC CHEMISTRY:—Department 5 and 6, II Year; 2 hours per week; both terms.

A lecture course dealing with the aliphatic compounds.

Text book:—Theoretical Organic Chemistry—Cohen.

89. ORGANIC CHEMISTRY:—Department 5, II Year; 14 hours per week; 7 weeks.

A laboratory course in organic preparations in the aliphatic series.

90. PHYSICAL CHEMISTRY:—Departments 5 and 6, II Year; 2 hours per week; both terms.

A course of lectures on the elements of chemical mechanics, and the theory of solutions.

91. ANALYTICAL CHEMISTRY:—Department 5, III Year; 19 hours per week; 16 weeks.

A laboratory course on the technical analysis of iron and steel alloys, ores, furnace products, ceramic materials, foods, gases, fuels, etc.

92. ANALYTICAL CHEMISTRY:—Department 6, III Year. 11 hours per week; first term; 13 hours per week, second term;

A laboratory course in volumetric and technical analysis.

93. ANALYTICAL CHEMISTRY:—Department 2, III Year; 5 hours per week; both terms.

A laboratory course on the technical analysis of ores and furnace products.

94. ENGINEERING CHEMISTRY:—Departments 1, 2, 3, 5, 6 and 7, III Year; Department 4, II Year; 1 hour per week; both terms.

A lecture course on the application of chemistry to engineering problems; air, water, sewage, the materials of construction, explosives, etc.

95. INDUSTRIAL CHEMISTRY:—Departments 5 and 6, III Year; 1 hour per week; both terms.

A lecture course on petroleum and its products, coal tar and its products, the destructive distillation of wood; fats, oils, soap, sugar, starch and gums; fermentation industries, etc.

Text book:—Industrial Chemistry—Thorpe.

96. CHEMICAL PLANT:—Departments 5 and 6, III Year; 1 hour per week; both terms.

A lecture course on the machinery and plant used in chemical manufacturing.

97. ORGANIC CHEMISTRY (A):—Departments 5 and 6, III Year; 2 hours per week; both terms.

A lecture course on the aromatic series.

Text book:—Theoretical Organic Chemistry—Cohen.

98. ORGANIC CHEMISTRY (B):—Departments 5 and 6, III Year; 1 hour per week; second term.

A lecture course on stereoisomerism, desmotropism, etc.

99. ORGANIC CHEMISTRY:—Department 5, III Year; 19 hours per week; 8 weeks.

A laboratory course in organic preparations in the aromatic series; organic analysis.

100. ORGANIC CHEMISTRY:—Department 6, III Year; 17 hours per week; 4 weeks.

A laboratory course in organic preparations.

101. ELECTROCHEMISTRY:—Departments 5, 6 and 7, III Year; 2 hours per week; first term.

A lecture course on elementary electrochemistry, illustrated by experiments.

102. ELECTROCHEMISTRY:—Departments 5, 6 and 7, III Year; 3 hours per week; first term.

A laboratory course in quantitative measurements to accompany course 101.

103. INORGANIC CHEMISTRY:—Departments 5 and 6, IV Year; 1 hour per week; both terms.

A lecture course on chemical theory.

104. ORGANIC CHEMISTRY:—Departments 5 and 6, IV Year; 1 hour per week; both terms.

A lecture course on advanced organic chemistry.

105. ORGANIC CHEMISTRY:—Departments 5 and 6, IV Year.

A laboratory course in advanced organic chemistry.

106. INDUSTRIAL CHEMISTRY:—Departments 5 and 6, IV Year; 1 hour per week; both terms.

A lecture course on selected subjects in chemical technology.

107. INDUSTRIAL CHEMISTRY:—Departments 5 and 6, IV Year; about 28 hours per week; both terms.

A laboratory course in industrial problems.

108. ELECTROCHEMISTRY:—Departments 5, 6 and 7, IV Year; 2 hours per week; both terms.

An advanced lecture course on the theory of solutions and electrolysis, and the application to the practice of electro-deposition and electrolytic refining of metals. The course also includes lectures on the electric furnace with special consideration of efficiency.

Text books:—Electrometallurgy—Borchers; Electrochemistry—Le Blanc; Electrochemistry—Luepke.

109. ELECTROCHEMISTRY:—Departments 5, 6 and 7, IV Year; about 28 hours per week.

A laboratory course accompanying course 108.

110. SANITARY AND FORENSIC CHEMISTRY:—Departments 5 and 6, IV Year; 1 hour per week; both terms.

A lecture course on the composition and examination of air, water and food; poisons and their detection.

111. SANITARY AND FORENSIC CHEMISTRY:—Departments 5 and 6, IV Year.

A laboratory course accompanying course 110.

112. ANALYTICAL CHEMISTKY:—Department 2, IV Year, 12 hours per week, first term.

A laboratory course comprising analysis of ores and furnace products.

DESCRIPTIVE GEOMETRY AND DRAWING.

115. DESCRIPTIVE GEOMETRY:—Departments 1, 2, 3, 6 and 7, I Year; 1 hour per week; both terms.

This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solution of problems relating to straight lines and planes.

116. DESCRIPTIVE GEOMETRY:—Department 4, I Year; 1 hour per week; both terms.

This course of lectures deals chiefly with the principles of orthographic and oblique projection and the application of such principles to the solution of problems relating to straight lines and planes, special reference being made to the determination of shades and shadows.

117. DRAWING:—Departments 1 and 2, I Year; about 16 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; the plotting of original surveys; measured drawings.

118. DRAWING:—Department 4, I Year; about 15 hours per week.

Copying from the flat, lettering, topography, freehand drawing in black and white, both from copies and models; the graphical solution of problems in statics ; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings. Elements and principles of Architecture.

119. DRAWING:—Department 5, I Year; about 9 hours per week.

Copying from the flat, lettering, measured drawings.

120. DRAWING:—Departments 3, 6 and 7, I Year; about 20 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings.

121. DESCRIPTIVE GEOMETRY:—Departments 1, 2, 3, 6 and 7, II Year; 1 hour per week; both terms.

This course of lectures is a continuation of the work taken in the first year with the following additions: Problems relating to curved surfaces, principles of shades and shadows, and perspective.

122. DESCRIPTIVE GEOMETRY:—Department 4, II Year; 1 hour per week; both terms.

This course of lectures is a continuation of the work taken in the First Year with the addition of problems relating to curved surfaces, Shades, Shadows, and Perspective.

123. DRAWING:—Departments 1 and 2, II Year; Department 1, about 14 hours per week; Department 2, about 7 hours per week; both terms.

Coloring and shading as applied to both topographical and construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows, and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

124. DRAWING:—Departments 3 and 7, II Year; about 15 hours per week; both terms.

Coloring and shading as applied to construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows, and perspective; solution of problems in optics, theory of mechanism and strength of materials; measured drawings; elementary design.

125. DRAWING:—Department 4, II Year; about 18 hours per week; both terms.

Freehand drawing including monochrome and colors; exercises from the orders of architecture; principles of shades, shadows and perspective; elementary architectural design; problems in descriptive geometry relating to solids bound by curved surfaces; solution of problems in optics and strength of materials; measured drawings.

126. DRAWING:—Department 6, II Year.
Same as Department 3, with exception that theory of mechanism is not included.

127. DESCRIPTIVE GEOMETRY:—Department 1, III Year; 1 hour per week; one term.
This course of lectures deals with spherical projections, the principles of map making, and the graphical solution of spherical triangles.

128. DRAWING:—Department 1, III Year; about 12 hours per week.
Principles of map making, spherical projection, plotting of original surveys relating to topographical and railway work; problems in theory of construction; original design of various structures; measured drawings.

129. DRAWING:—Department 2, III Year; 4½ hours per week.
Plotting of original surveys, relating to topographical and railway work and mining; problems in theory of construction; original design; measured drawings.

130. DRAWING:—Department 4, III Year; about 16 hours per week; first term. 22 hours per week, second term.
Advanced work in monochrome and colors; problems in shades, shadows and perspective; architectural design; problems in theory of construction, including framed structures.

131. DESCRIPTIVE GEOMETRY:—Department 4, III Year; 1 hour per week; first term.
Advanced work in shades and shadows and perspective.

132. DRAWING:—Departments 2, 3 and 6, III Year; 3 hours per week; both terms.
Problems in Design dealing with the Theory of Structures.

ELECTRICITY.

135. MAGNETISM AND ELECTRICITY:—Departments 3, 5, 6 and 7, I Year; 2 hours per week; first term.
A course of lectures on general principles relating to magnetism, electricity, electromagnetism, electrostatics, etc., illustrated largely from engineering apparatus.
Text book:—Elementary Electricity and Magnetism—S. P. Thompson.

136. ELECTRIC CIRCUITS:—Departments 3, 5, 6 and 7, I Year; 2 hours per week; second term.

This course of lectures concerns chiefly fundamental principles relating to electric circuits and leads to consideration of such problems as the distribution of electric energy through lines and networks and the division of load between generators.

Text book:—Electrical Problems—Hooper and Wells.

137. ELECTRICITY:—Departments 3, 5, 6 and 7, I Year; 3 hours alternate weeks; both terms.

A laboratory course of experiments, given in logical order, designed to demonstrate fundamental principles in connection with the generation and flow of currents in electric circuits. The work is associated with the lecture courses, magnetism and electricity, and electric circuits (135, 136).

138. ELECTRICITY:—Departments 3, 5, 6 and 7, II Year; 2 hours per week; both terms.

Deals with the theory of electrical measurements, and detailed study of various methods applicable under different conditions in engineering practice to the measurement of resistance, current, potential difference, power and energy; calibration of commercial measuring instruments. The effect of choice of conditions of measurement on the accuracy of the result is considered.

Text book:—Electrical Measurements—Carhart and Patterson.

139. ELECTRICAL LABORATORY:—Departments 3, 5, 6 and 7, II Year; 2½ hours per week; both terms.

This laboratory course is closely associated with the lecture course 138 on electricity for the second year. The more important and useful methods of testing generators and circuits for electromotive force, resistance, current, grounds, etc., are practised, often under conditions such as occur in practice. The work also includes methods of calibration of measuring instruments for voltage, current, power and energy, and certain studies of properties of incandescent lamps.

140. ELECTRICITY:—Department 2, III Year; Departments 1 and 4, IV Year; 1 hour per week.

A course designed to fit the requirements of non-electrical students. A study of essential principles is followed by discussion of electrical apparatus, plants, power transmission, railways, etc.

Text book:—Elementary Electricity and Magnetism—Jackson.

141. POWER:—Departments 2 and 6, IV Year.

Under the name "Power" a number of operating experiments are arranged to afford mining and chemical engineering students some familiarity with measuring instruments, direct and alternating current machinery.

142. MAGNETISM AND ELECTRICITY:—Departments 3 and 7, III Year; 2 hours per week; both terms.

A course of lectures on theory of magnetism and magnetic circuits, theory of direct current generators, motors, etc.

Text book:—Elements of Electrical Engineering, Vol. I—Franklin and Esty.

143. ALTERNATING CURRENT:—Departments 3 and 7, III Year; 2 hours per week; second term.

A first course of lectures on alternating current, covering principles of measurement and leading to the analytical and graphical treatment of the simpler problems relative to alternating current circuits and machinery.

Text book:—Elements of Electrical Engineering, Vol. II—Franklin and Esty.

144. ELECTRICAL LABORATORY:—Departments 3 and 7, III Year; 6 hours per week.

This laboratory course is intended to afford the student an opportunity to become familiar with principles involved in continuous current shunt, series and compound wound generators and motors, and, to some extent, alternating current circuits and machinery. Other sections of the work deal with the magnetic properties of iron and steel, and study of iron losses in transformers and generators.

The course is arranged to stand in close relation to the lecture courses in the subjects of magnetism and electricity and alternating current (142, 143) for Year III, and to certain design work (145).

145. ELECTRICAL DESIGN:—Department 7, III Year; 4½ hours per week: one term.

A course of lectures dealing with design of electric machinery and plants, accompanied by designs to be worked out in the design room.

References:—Dynamo-electric Machinery—S. P. Thompson; Electric Machine Design—Parshall and Hobart.

146. ELECTRICAL DESIGN:—Department 7, III Year.

A design room is set apart for working out of designs of electrical apparatus such as transformers, generators, motors, auxiliary apparatus, etc.

Special forms and notes are employed arranged to suit the various studies. Certain models are provided to assist where necessary.

147. APPLIED ELECTRICITY:—Department 7, IV Year.

This course deals by analytical and vector methods with the theory of alternating current circuits and machinery. Applications of theory are considered with regard to transformers, single and polyphase generators, synchronous motors and rotary converters, induction and commutating series motors, transmission lines, wave analysis, etc.

148. ELECTRICAL LABORATORY:—Department 7, IV Year in connection with 147.

This laboratory course involves a thorough study of principles and properties of single and polyphase circuits and apparatus. Both vector and analytical methods are applied to the solution of problems based on tests made on laboratory machines.

The work deals mainly with constant voltage and constant current transformers, single and polyphase alternators, synchronous motors, rotary converters, induction and single phase commutating motors, transmission line, etc. The work does not consist only of factory tests, but is designed to lead the student to apply theory to practice as illustrated in the apparatus under test, with a view to an exact understanding of methods and an appreciation of limitations under many conditions. Free use is made of the oscillograph as a necessary device for "seeing" conditions under investigation. The best commercial measuring instruments are available.

GEOLOGY.

150. GEOLOGY (Elementary):—Departments 2 and 5, II Year; Department 1, III Year; 1 hour per week; both terms.

This course deals chiefly with historical geology with special reference to Canadian formations.

Reference books:—Introduction to Geology—Scott; Text Book of Geology—Dana.

151. ECONOMIC GEOLOGY. (Including Dynamical and Structural Geology.) Department 2, III Year; 2 hours per week; both terms; and Department 1, IV Year.

A study of the more important economic rocks, minerals and ores with their geological associations. Special attention paid to Canadian deposits.

152. ADVANCED GEOLOGY:—Department 2, IV Year.

(A) *Pre-Cambrian Geology.*—An account of the Keewatin, Huronian and Laurentian rocks of Canada, with their distribution, structural relations and economic features, and briefer accounts of similar formations in the United States and elsewhere.

Works of Reference:---Reports of the United States and Canadian Geological Surveys, of the Bureau of Mines of Ontario, etc.

(B) *Pleistocene Geology.*—Lectures on the formation and distribution of the drift deposits of North America, with brief references to other regions. Glacial, Interglacial and Post glacial beds are described, changes of climate are discussed with their probable causes, and the economic features of the clays, sands and gravels are pointed out. A weekly excursion is made during October and November to points of interest near Toronto, which is the centre of the most important development of Pleistocene in America.

(C) *Physiography.*—A course of lectures on the surface forms of the earth, with the geological factors which have produced them. The broad features of the earth, its plains, tablelands, hills, valleys, mountains, oceans, rivers and lakes are discussed in a general way, methods of topographical surveys and mapping are referred to, and the chief physiographic areas of Canada are described.

153. MINING GEOLOGY:—Department 2, IV Year, 1 hour per week; both terms.

A course of lectures on geological problems associated with mining, typical mining regions in Canada, the United States and elsewhere being discussed from the geological side. Works of reference:—Mineral Industry and the books mentioned under (A).

154. GEOLOGICAL EXCURSIONS:—Department 2, IV Year.

Trips to points of interest in the vicinity of Toronto.

155. ORE DEPOSITS:—Department 2, III Year; 1 hour per week; both terms.

Discussion of the origin and classification of ore deposits in a general way, the mode of occurrence of the chief metals, and statistics of production, special attention being given to the metals mined in Canada.

156. ECONOMIC GEOLOGY:—Department 2, III Year; 1 hour per week; both terms.

Laboratory work on ores, manner of occurrence, vein structure, etc. Geological maps of typical mining regions.

MINERALOGY.

157. ELEMENTARY MINERALOGY:—Department 5, I Year, Department 2, II Year; 2 lectures per week; first term.

After introducing the student to the chief chemical, physical and crystallographic characteristics of minerals, the course becomes descriptive and deals with about one hundred of the minerals most important from the industrial or scientific point of view.

Text books:—Minerals and how to study them—Dana; Text Book of Mineralogy—Dana.

158. MINERALOGY:—Department 5, I Year; 4 hours per week; first term; 3 hours per week; second term.

Introduction to blow-pipe analysis, determination of minerals by inspection and physical tests.

Text books:—Text book of Mineralogy—Dana; Mineral Tables—Eakle; Determinative Mineralogy and Blow-Pipe Analysis—Brush-Penfield.

159. PRIMARY MINERALOGY:—Department 1, II Year; 2 hours per week; first term.

A very brief introduction to the study of minerals and rocks.

Text books:—Minerals and how to study them—Dana; Handbook of Rocks—Kemp.

160. MINERALOGY:—Department 2, II Year; 1 hour per week; first term; 3 hours per week; second term. Determination of minerals by inspection and by means of physical tests; introduction to blow-pipe practice.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy and Blow-pipe Analysis—Brush-Penfield.

161. MINERALOGY:—Department 1, II Year; 1 hour per week; first term; 2 hours per week; second term. Determination of minerals by inspection and by means of physical tests; study of common rock types and their identification.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

162. MINERALOGY:—Department 5, II Year; 1 hour per week; second term. Introduction to the study of rocks; determination of minerals and rocks by means of tables based on the physical properties.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

163. ELEMENTARY PETROGRAPHY:—Department 2, III Year; 1 hour per week.

A course of lectures and laboratory work introducing the student to the macroscopic study of rocks.

Text books:—Handbook of Rocks—Kemp; Rocks and rock minerals—Pirsson.

164. MINERALOGY:—Department 2, III Year; 2 hours per week. Determination of minerals by means of the blow-pipe and physical properties.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy and Blow-Pipe Analysis—Brush-Penfield.

165. GENERAL PETROGRAPHY:—Department 2, IV Year. 1 hour per week; first term; 2 hours per week; second term.

Study of the chief rock-forming minerals and of some phases of petrography not covered in the course of the previous year.

166. PETROGRAPHY:—Department 2, IV Year; 2 hours per week; both terms. Study of the chief rock-forming minerals, of rocks in thin sections and in hand specimens.

Text books:—Rocks and Rock Minerals—Pirsson; Minerals in Rock Sections—Luquer.

167. CRYSTALLOGRAPHY:—Department 5, III Year; 1 hour per week.

A course devoted to lectures and practical work on the geometrical and optical properties of crystals, preparing the student for the study of rocks in thin sections and for the examination of crystallized substances, natural and artificial, under the polarizing microscope.

155. ORE DEPOSITS:—Department 2, III Year; 1 hour per week; both terms.

Discussion of the origin and classification of ore deposits in a general way, the mode of occurrence of the chief metals, and statistics of production, special attention being given to the metals mined in Canada.

156. ECONOMIC GEOLOGY:—Department 2, III Year; 1 hour per week; both terms.

Laboratory work on ores, manner of occurrence, vein structure, etc. Geological maps of typical mining regions.

MINERALOGY.

157. ELEMENTARY MINERALOGY:—Department 5, I Year, Department 2, II Year; 2 lectures per week; first term.

After introducing the student to the chief chemical, physical and crystallographic characteristics of minerals, the course becomes descriptive and deals with about one hundred of the minerals most important from the industrial or scientific point of view.

Text books:—Minerals and how to study them—Dana; Text Book of Mineralogy—Dana.

158. MINERALOGY:—Department 5, I Year; 4 hours per week; first term; 3 hours per week; second term.

Introduction to blow-pipe analysis, determination of minerals by inspection and physical tests.

Text books:—Text book of Mineralogy—Dana; Mineral Tables—Eakle; Determinative Mineralogy and Blow-Pipe Analysis—Brush-Penfield.

159. PRIMARY MINERALOGY:—Department 1, II Year; 2 hours per week; first term.

A very brief introduction to the study of minerals and rocks.

Text books:—Minerals and how to study them—Dana; Handbook of Rocks—Kemp.

160. MINERALOGY:—Department 2, II Year; 1 hour per week; first term; 3 hours per week; second term. Determination of minerals by inspection and by means of physical tests; introduction to blow-pipe practice.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy and Blow-pipe Analysis—Brush-Penfield.

161. MINERALOGY:—Department 1, II Year; 1 hour per week; first term; 2 hours per week; second term. Determination of minerals by inspection and by means of physical tests; study of common rock types and their identification.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

162. MINERALOGY:—Department 5, II Year; 1 hour per week; second term. Introduction to the study of rocks; determination of minerals and rocks by means of tables based on the physical properties.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

163. ELEMENTARY PETROGRAPHY:—Department 2, III Year; 1 hour per week.

A course of lectures and laboratory work introducing the student to the macroscopic study of rocks.

Text books:—Handbook of Rocks—Kemp; Rocks and rock minerals—Pirsson.

164. MINERALOGY:—Department 2, III Year; 2 hours per week. Determination of minerals by means of the blow-pipe and physical properties.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy and Blow-Pipe Analysis—Brush-Penfield.

165. GENERAL PETROGRAPHY:—Department 2, IV Year. 1 hour per week; first term; 2 hours per week; second term.

Study of the chief rock-forming minerals and of some phases of petrography not covered in the course of the previous year.

166. PETROGRAPHY:—Department 2, IV Year; 2 hours per week; both terms. Study of the chief rock-forming minerals, of rocks in thin sections and in hand specimens.

Text books:—Rocks and Rock Minerals—Pirsson; Minerals in Rock Sections—Luquer.

167. CRYSTALLOGRAPHY:—Department 5, III Year; 1 hour per week.

A course devoted to lectures and practical work on the geometrical and optical properties of crystals, preparing the student for the study of rocks in thin sections and for the examination of crystallized substances, natural and artificial, under the polarizing microscope.

MINING, METALLURGY AND ORE DRESSING.

170. MINING:—Department 2, II Year; 1 hour per week; second term.
An introduction to the study of mining and ore dressing methods.

171. MINING AND ORE DRESSING:—Department 2, II Year; 3 hours per week; second term.
Introductory work with rock-drills and various ore dressing-appliances.

172. MINING:—Department 2, III Year, 1 hour lecture per week; both terms; 3 hours laboratory per week; one term.
General mining methods.

173. ASSAYING:—Departments 2, 5 and 6, III Year; 1 hour lecture per week; one term; 3 hours laboratory work per week; both terms.
Assaying of various ores for gold, silver, lead and copper.

174. ASSAYING:—Department 2, IV Year; 1 hour lecture per week; one term; 3 hours laboratory work per week; one term.
Continuation of the work of Year III.

175. MINING:—Department 2, IV Year; 1 hour lecture per week; both terms.
Special mining methods, examinations, reports.

176. MILLING:—Department 2, IV Year; 3 hours laboratory work per week; both terms.
Advanced work with ore dressing appliances, complete mill tests.

177. METALLURGY:—Department 2, IV Year; 3 hours laboratory work per week; both terms.
Experiments in the pyro-metallurgy of copper and lead, refining of base bullion, cyanide tests.

178. METALLURGY:—Departments 2, 5 and 6, II Year; 1 hour per week; one term.
An introduction to the study of general metallurgy.

179. METALLURGY:—Departments 2, 5 and 6, III Year; 1 hour per week; both terms.
General metallurgy of gold, silver, lead and copper.

180. METALLURGY:—Departments 2, 5 and 6, IV Year; 1 hour per week; both terms.

Advanced studies in the metallurgy of gold, silver, copper and lead, etc.

181. METALLURGY OF IRON AND STEEL:—Departments 1, 2, 3, 5, 6 and 7, III Year; 1 hour per week; both terms.

The physical properties of iron and steel and the circumstances that influence the strength, etc. of iron. The different modes of manufacture of iron and steel and the effect of different processes of making on the resulting products; explanations of specifications for iron and steel adopted by engineers.

182. ORE DRESSING:—Department 2, III Year; 1 hour per week; both terms;.

183. MINING AND ORE DRESSING:—Department 2, III Year; 3 hours per week; one term.

184. ORE DRESSING:—Department 2, IV. Year; 1 hour per week; both terms.

Continuation of work of Year II. Experimental work to determine falling ratios, magnetic permeability of minerals, etc., sampling of mill products and ore in place.

MATHEMATICS.

187. ALGEBRA:—All Departments, I Year; 2 hours per week; both terms.

Simple equations of one, two and three unknown quantities; quadratic equations of one and two unknown quantities; elementary treatment of variation, proportion and progressions; interest forms and annuities, permutations, combinations, binomial theorem.

Text book:—Intermediate Algebra—DeLury.

188. ANALYTICAL GEOMETRY:—All Departments, I Year; 1 hour per week; both terms.

The course in Elementary Analytical Geometry covers the more familiar propositions in connection with the straight line, circle, parabola, ellipse and hyberbola. The subject is treated so as to illustrate the general methods of analytical geometry.

189. TRIGONOMETRY, PLANE:—All Departments I Year; 2 hours per week; both terms.

Trigonometrical ratios with their relations to one another, sines, etc., of the sum and difference of angles with deduced formulæ, solutions of triangles, expressions of the area of triangles, radii of circumscribed, inscribed and escribed circles.

Text book:—Practical Trigonometry—Plane and Fawdry.

190. CALCULUS, DIFFERENTIAL AND INTEGRAL:—Departments 1, 2, 3, 4, 6, and 7, II Year; Department 5, II Year, optional; 2 hours per week; both terms.

This is an elementary course in the infinitesimal calculus, but adequate to afford a knowledge of the character and methods of the subject and to enable students in chemistry, engineering, etc., to understand such of their text books as introduce the calculus.

191. TRIGONOMETRY, SPHERICAL:—Department 1, II Year; 1 hour per week; first term.

A course of lectures includes the derivation of formulæ and their application to the solution of triangles and to practical problems.

Text book:—Spherical Trigonometry—Todhunter and Leatham.

192. LEAST SQUARES, METHOD OF:—Department 1, III Year; 1 hour per week; first term.

The course of lectures includes: The general principles of probability, the law of error, direct measurements of equal and different weights; mean square and probable errors; indirect measurements; conditioned observations; applications to empirical constants and formulæ, etc.

Text book:—Least Squares—Merriman.

TECHNICAL PHYSICS.

195. ACOUSTICS:—Department 4, III Year.

Wave motion, propagation, reflection and transmission of sounds, Laws of vibrating strings, pipes and forks. Velocity of sound. Musical scales. Absorption of sound by various substances, use of deadening material in buildings. Amount of reverberation permissible and desirable in public buildings. Lectures and Laboratory work—Fall Term.

196. HYDROSTATICS:—All Departments, II Year.

Laws of fluid pressure and application to machines.

Density of solids and fluids, theory of flotation.

Lectures and Laboratory work, Spring term.

197. OPTICS:—All Departments, II Year.

Rectilinear propagation of light, illumination, photometry, light standards. Distribution of light by reflectors and diffusers, general and selective absorption, economic values of artificial lights.

Laws of reflection and refraction, theory of optical instruments.

Light considered as wave motion, dispersion, spectrum analysis, color phenomena, polarization.

Lectures and Laboratory work, Fall term.

198. HEAT:—Departments 1, 5, III Year.

Generation and propagation of heat. General and industrial thermometry, calorimetry and pyrometry. Linear and cubical expansion, gas laws. Specific heat of solids, liquids and gases, latent heat of fusion and vaporization. Mechanical equivalent of heat. Carnot cycle.

Lectures and Laboratory work, Fall term.

199. PHOTOGRAPHY:—Departments 1, 4, III Year; Departments 3, 7, IV Year.

The camera and its adjustments, lenses, shutters, screens. Plates for various purposes, films, prevention of halation. Lighting, exposure, development. Paper of various kinds, printing, enlargement and reduction, blue printing and allied processes. Record photography, photogrammetry and photo-surveying. Photography in color.

Lectures Fall Term and Laboratory work both terms.

SURVEYING.

205. SURVEYING:—Departments 1 and 2, I Year; 1 hour per week; both terms.

The lecture course includes—the general principles; surveying with the chain, the compass and chain and the transit and chain; the applications of trigonometry to inaccessible heights and distances; mensuration of surfaces and solids, co-ordinate surveying, division of land, etc.

Text books:—Land Surveying—Gillespie; Theory and Practice of Surveying—Johnson.

206. FIELD WORK:—Departments 1 and 2, I Year; 9 hours per week; first term.

This course comprises—testing chains; practice in chaining; a complete survey of a piece of land with the chain; keeping of field notes; the use of the compass and transit in surveying closed figures and traverse lines and in ranging straight lines; plotting by latitudes and departures and otherwise; computing areas.

207. SURVEYING:—Departments 1 and 2, II Year; 1 hour per week; both terms.

This course of lectures takes up in detail, simple, reverse and compound curves as applied to railroad surveying. It also includes stadia, plane table and photographic surveying as applied to topographic work and also the main features of mine and hydrographic surveying.

Text books:—Henck, Shunk, Searles, Allen (Field books for Engineers) Theory and practice of surveying—Johnson; Plane surveying—Raymond.

208. FIELD WORK:—Departments 1 and 2, II Year; 9 hours per week ; first term.

This course of instruction embraces all adjustments of the transit, accurate determination of angles of closed figure, minor problems in triangulation—ordinary and special problems as applied to railroad work in regard to curves, simple, reverse and compound, profile levelling and plotting of profile.

209. SURVEYING AND LEVELLING:—Departments 1 and 2, III Year; 1 hour per week.

This course of lectures takes up the work of the railroad engineer on construction, including profiles, cross sectioning, computation of volume of earth work, overhaul, transition curves, laying out turnouts, frogs, and switches, etc.

Also a discussion of trigonometric and barometric levelling.

Text books :—Field Engineering—Searles ; Railroad Curves and Earthwork—Allen.

210. FIELD WORK:—Departments 1 and 2, III Year; about 9 hours per week ; fall term.

This includes adjustments of levels and accurate check differential levelling, determination of profile, cross sectioning and computation of earthworth of located line on ground and plotting of same; also cross sectioning by use of hand level. A complete stadia topographic survey is made and plotted. The spiralling of curves on track already laid down and practical methods of locating and placing sidings and switches.

FOURTH YEAR OPTIONS.

211. **RAILWAY ENGINEERING**:—Department 1, IV Year; about 2 hours per week.

The object of this course is to make the student acquainted with the general principles of railroad and street railway engineering and the subject will be studied from the standpoint of—economic theory of location; train resistance; effect of grade, distance and curvature and rise and fall; maintenance of way; yards and terminals; tunnels, and street railway practice.

212. **FIELD WORK**:—Department 1, IV Year; about 11 hours per week; first term.

The work consists of an original survey for a railroad some one or two miles in length, the work being conducted according to the most modern methods of location. Upon the completion of this work a contour map of the district surveyed is plotted in the drafting room and a line adjusted to it. This is staked out in the field, profiles taken and complete estimates of the cost of construction made.

213. **SANITARY ENGINEERING.**

Sanitary Chemistry:—Department 1, IV Year. A lecture and laboratory course of about 16 hours per week for one term on water supply and sewage disposal.

Botany:—An elementary lecture and laboratory course of about 3 hours per week; second term, on the economic algae and fungi.

Zoology:—Lecture and laboratory course of 4 hours per week; second term, in the morphology, ecology and classification of aquatic animals.

Bacteriology :—A lecture and laboratory course of 8 hours per week; second term, in elementary bacteriology.

Sanitary Engineering:—A lecture course of 1 hour per week, one term; in which consideration is given to the problems of water supply and sewage disposal as viewed by the engineer.

Reference books:—Sewage Disposal: Kinnicutt, Winslow & Pratt. Water Supplies: Turneaure & Russell.

214. **HIGHWAY ENGINEERING**:—Department 1, IV Year. A lecture and laboratory course of about 8 hours per week dealing with materials, design and construction of highways and pavements and the testing of various materials used in such work.

215. STRUCTURAL ENGINEERING:—Students in Civil Engineering who desire to specialize in the subjects best fitting them for designing or constructing engineers on bridge, building or other analogous work, may do so by selecting the Structural Engineering Option in the fourth year. In addition to the obligatory subjects, the following lecture and laboratory courses are provided for those selecting this option:

Theory of Structures:— (16)This consists of a lecture course of 2 hours per week; both terms, with an accompanying course of about 7 hours per week, in design.

Strength and Elasticity of Materials:— (17)This is a laboratory course in the elastic and physical properties of the materials of construction, occupying about 9 hours per week in the first term and 6 hours per week in the second term.

Steel and Iron (23):—In this course of lectures, consisting of one hour per week in the first term, the physical properties of steels and irons are discussed.

Reinforced Concrete (22):—Under this title, the theory of reinforced concrete is discussed in a lecture course of one hour per week; both terms.

Structural Design of Buildings (51):—This is a lecture course devoted to the design of the structural features of buildings, consisting of two hours per week in the first term and one hour per week in the second term, and in addition a laboratory or drafting room course of about six hours per week; both terms.

Mill Building Design (24):—This consists of a lecture course of one hour per week; both terms; and a drafting room course of about 3 hours per week; both terms.

216. ARCHITECTURAL ENGINEERING:—Architectural students desiring to give special attention to the structural design of buildings may do so by electing to take the Architectural Engineering Option in the fourth year. The following subjects, in addition to those required of all students in the fourth year in Architecture, are required:

Structural Design of Buildings (51):—The lecture course in connection with this subject consists of two hours per week in the first term and one hour per week in the second term, and a drawing course of about 15 hours per week; both terms.

Mill Building Design (24):—This consists of a lecture course of one hour per week; both terms; and a drawing course of about 3 hours per week; both terms.

Architectural Design (48A):—This is an abridged course, consisting of lectures occupying one hour per week; both terms, and studio work of about six hours per week; both terms.

MODERN LANGUAGES.

217. FRENCH.

Required in Department 4, optional in Departments 1, 2, 3 and 7, I and II Years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

218. GERMAN.

Required in Departments 5 and 6, all years, optional in Departments 1, 2, 3 and 7, I and II Years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

THESIS.

219. THESIS.

Required in all departments IV Year.

Each student is required to prepare a thesis of between six thousand and seven thousand words on a subject approved by Council. See Circular of information.

VACATION WORK.

220. CONSTRUCTION NOTES. See special circular of information.

OUTLINE OF VACATION WORK.

CONSTRUCTION NOTES.

II and III Years.

The construction notes required consist of neat and complete dimensioned sketches in pencil of any structures, machines or plant which may be of interest. Any object chosen should be represented and dimensioned in such a manner that it could be completely constructed from the notes as the only available information.

From students in Department 2, who have been actually engaged during the summer with Government or other approved geological survey parties, geological field notes will be accepted in lieu of construction notes.

PROFESSIONAL DEGREES.

The attention of graduates is directed to the following regulations respecting professional degrees.

The following degrees have been established: Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem.E.), subject to the following regulations:—

1. A candidate for one of the said degrees shall hold the diploma of the School of Practical Science or of the Faculty of Applied Science and Engineering and the degree of Bachelor of Applied Science except in the case provided for in clause 11 hereunder.

2. He shall have spent at least three years after receiving the degree of Bachelor of Applied Science in the actual practice of the branch of engineering wherein he is a candidate for a degree.

3. Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.

4. Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidate's professional experience for the purpose of clauses 2 and 3.

   The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.

5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree; the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.

   The candidate may be required at the option of the Examiners to undergo an examination in the subject of this thesis.

6. Notice in writing shall be sent to the Secretary not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Examiners.
7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Secretary not later than the first day of April.
8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Examiners.
9. The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.
10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the University.
11. Candidates who graduated from the School of Practical Science before June, 1905, shall not be required to hold the degree of Bachelor of Applied Science.

EXTRACTS FROM SURVEY ACTS.

From the Ontario Act Respecting Land Surveyors and Survey of Lands (R.S.O.)

"26. Any person serving as an apprentice as hereinbefore provided, may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship and of course of study shall not exceed the period of four years from the date of the articles of apprenticeship as above mentioned, and not less than three years of the said period of four years shall be passed in the actual service of a practising Ontario Land Surveyor.

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"28. The privilege of a shortened term of apprenticeship shall also be accorded to any graduate of the Royal Military College at Kingston or of the Ontario School of Practical Science in civil engineering or in mining engineering, or of the McGill College, Montreal, in civil engineering or in mining engineering, and such person shall not be required to pass the preliminary examination hereinbefore required for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor duly filed as required by section 32 of this Act, during twelve successive months of actual practice, after which, on complying with all the other requirements, he may undergo the examination prescribed by this Act.

"29. Such person at any time during his apprenticeship may, with the permission of the Board of Examiners,attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship, and of course of study, shall not exceed the period of two years from the date of the articles of apprenticeship as above mentioned, and not less than twelve months of the said period of two years shall be passed in the actual service of a practising Ontario Land Surveyor."

From Act Respecting Manitoba Land Surveyors.

"28. (1) The privilege of a shortened term of apprenticeship shall be accorded to graduates of the Royal Military College of Canada and to graduates in civil engineering of the University of McGill College of Montreal, the School of Practical Science of Toronto, the School of Mining at Kingston, and graduates of Manitoba University who have taken first or second class honours in the special course in mathematics; and such graduates shall not be required to pass the preliminary examination hereinbefore prescribed for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor, duly filed as required by section 24 of this Act, during twelve successive months of actual practice of which at least six months shall be at actual practice in the field, after which, on complying with the other requirements of this Act, he my undergo the examination for commission to practice prescribed by this Act."

From British Columbia Land Surveyors' Act, 1905.

"52. Whosoever shall have followed, during at least two years, a regular course of studies in all the branches of the sciences required by law in order to be received as a land surveyor; who has attended the lectures of a British university or college where a complete course of theoretical and practical instruction is given in civil engineering, physics, and all other branches of sciences required by law in order to be admitted as a land surveyor, and who has received from such university or college, after a regular examination, his diploma or degree as a civil engineer or land surveyor, on satisfying the Board that he is duly qualified as aforesaid, may, without undergoing the examination for admission to the study of land surveying, be received as a student by any member of the Corporation practising in this Province, and shall be bound to perform only twelve months' actual service in the field as such, or; if he has obtained his degree or diploma as a civil engineer or land surveyor in less than two full years, then only such time of service which, added to the time he has devoted to his course of studies, shall complete the period of three full years; and, at the expiration of the said active service, such person, on complying with the other provisions of this section, shall have the right to present himself and undergo the examination required by law, and, if qualified, to be admitted to practise as a land surveyor for the Province as if he had served his three full years under his indentures with a practising land surveyor; but instead of paying fifty dollars he shall be obliged to pay sixty dollars as fees for his examination and commission as land surveyor."

The above section is to be taken collectively as a whole, no separate clause or sentence can be applied to any particular case.

From the Dominion Lands Act, 1908.

"Every graudate in surveying of the Royal Military College of Canada. and every person who has followed a regular course of study in all the branches of education required by this Act for admission as a Dominion land surveyor, for at least two years, in any college or university where a complete course of theoretical and practical instruction in surveying is organized, and who, after examination has thereupon received from such college or university a diploma or certificate, shall be exempt from serving three years aforesaid, and shall be entitled to examination for a commission after being admitted upon examination as aforesaid as an articled pupil and serving one year under articles with a Dominion land surveyor, including six months' actual practice with him in the field, on producing an affidavit from the said surveyor in said form C, together with his own affidavit in said form D, that he has served for one year as herein provided; but it shall rest with the Board to decide whether the course of instruction in such college or university meets the requirements of this section.

EXTRACT FROM THE ONTARIO ARCHITECTS' ACT.

"Any student who has matriculated in Arts in any University in His Majesty's dominions, or in the Ontario School of Practical Science, shall not be required to pass the preliminary examinations.

"23. Any person who applies for admission to registration as an architect after the coming into force of this Act, shall not be less than twenty-one years of age, shall have served as a student not less than five years with a principal or principals entitled to register under this Act, or with any other principal or principals approved by the Council, and have passed such qualifying examinations as may be required by this Act.

"24. (3) Any person who has graduated from the Ontario School of Practical Science shall be required to serve only three years as a student, one of which three years may be served during the vacation of such school.

"(4) Upon and after the passing of this Act, students shall serve such term as is required to be served by the provisions of this Act, under indenture to be a registered architect, which indenture and any assignment thereof with affidavit of execution thereto attached shall be filed with the Registrar upon payment of such fees as the Council may by regulation direct.

LABORATORY EQUIPMENT.

THERMODYNAMIC AND MECHANICAL LABORATORY.

The University in 1909 completed the erection of a large, well-equipped building for the accommodation of the steam, gas, mechanical and hydraulic laboratories. A more complete description of the laboratories has been published elsewhere so that the present description is only intended to give the main features.

The part of the building set apart for thermodynamics and other mechanical work is the ground floor of a room 60 ft. x 155 ft. This room is lighted entirely from the roof in a very perfect way. A part of the space 40 ft. wide running the entire length of 155 feet is served by a 3-ton travelling crane and contains the following equipment:

50 h.p. Brown engine with separate jackets on both heads and barrel of cylinder.

Two-stage Rand air compressor having compound steam cylinders, each fitted with Meyer cut-off gear. The low pressure air cylinder has Corliss inlet gear.

30 h.p. high-speed Leonard tandem compound engine with shaft governor.
15 h.p. high speed McEwen engine.
75 h.p. two line compound Willans engine.
15 h.p. DeLaval turbine with special nozzles for condensing and non-condensing tests.

Two 15 h.p. Leonard engines with different types of valves, which are used for valve setting.

There are also two surface condensers with air pumps so arranged that any engine in the laboratory may be made to exhaust into the atmosphere through an open heater or into one of the condensers, the change from one arrangement to the other being accomplished in a few minutes without the aid of valves.

The laboratory further contains:
A 3-ton York refrigerating machine with tanks.
An Amsler transmission dynamometer.
Apparatus for testing injectors and steam pumps.
Numerous other pieces of apparatus and instruments.

The work on internal combustion engines and producers is performed on the following:—

18 h.p. Canada suction gas producer.

14 h.p. National gas engine arranged for various compressions and points of ignition.

10 h.p. Fielding and Platt engine for city gas or coal oil, having various adjustments.

8 h.p. Otto gas engine.

6 h.p. marine gasoline engine.

Ericsson air engine.

Various accessories to above machines.

Steam for the laboratory is supplied by two 50 h.p. and one 100 h.p. Babcock and Wilcox boilers, the latter having an internal superheater. These boilers are located in a separate boiler room. They are used for experimental work only and are fitted up for testing. The gases pass up through two independent chimneys and these have been arranged so that the draft and other conditions in the chimney at any point of its height may be examined.

In smaller work rooms off the main laboratory are placed belt and oil testing machines, apparatus for testing the efficiency of gears and machines, and for experiments in the balancing of machinery.

HYDRAULIC LABORATORY.

The hydraulic laboratory occupies two floors each 40 feet x 112 feet, which are well lighted by large windows on the side and end.

The water for the experimental work is pumped through the various pieces of apparatus from a well by means of two turbine pumping units both of which are driven by a Belliss and Morcom compound engine of 125 h.p. running at a speed of 525 revs. per minute. Both engine and pumps have been installed with a view to using them in experimental work as well as for supply of water for other apparatus used in the laboratory.

The pumping units are capable of delivering one cubic foot of water per second against heads of 250 feet and 300 feet respectively. These units are designed and connected up so that they may be run in series giving the above discharge at 550 feet head or they may be run in parallel giving double the discharge at a lower head. Each pumping unit consists of two two-stage pumps mounted on a common base and driven by a single pulley and the construction and piping are such that each two-stage pump may be driven separately or that all may be driven at once, discharging separately one cubic foot per second at about 125 feet head through each of four independent pipes, or else the pumps may be run in series or in parallel. The scheme is thus well adapted to laboratory work and under the heads used on reaction turbines about six cubic feet per second may be obtained.

The laboratory further contains a large vertical steel tank 5½ feet diameter by 34 feet high with arrangements for the attachment of nozzles and other mouth pieces, etc. Connections are also arranged for reaction turbines, the tank acting as a reservoir.

The discharge from the turbines or nozzles is measured in a weir tank nearly 6 feet wide and 21 feet long containing a contracted weir 4½ feet wide. This weir may be calibrated by two weighing tanks each having a capacity of about 240 cubic feet.

There are three reaction turbines and two impulse wheels all ready for experiment, the power being measured by brakes and the water by weir or orifices. Amongst the reaction turbines may be mentioned the one designed and built by Escher Wyss and Co., specially for the laboratory.

Smaller orifice and weir tanks each about 3 x 3 x 12 feet with necessary measuring tanks are arranged for instruction in coefficients of various kinds and practice with weirs and orifices.

A Venturi meter and other meters, also an hydraulic ram and similar devices are available for testing, and good facilities have been arranged for investigating friction and other properties of pipes and fire hose.

For special investigations on turbine and centrifugal pumps, other pumps in addition to those already described have been arranged.

The basement of the laboratory contains an open trough 5 feet wide about 110 feet long with a large weir at one end. It is intended to use this trough for experiments on the flow in open channels, for measurements of large discharges by means of the weir, and for experiments with current meters and Pitot tubes.

Numerous pieces of smaller apparatus together with all instruments required have also been provided, and the laboratory equipment is believed to be very complete.

DONATIONS TO THE THERMODYNAMIC AND HYDRAULIC LABORATORIES.

The following donations to the equipment of the laboratories have been made through the kindness of those mentioned.

50 h.p. Wheeler Surface Condenser, presented by Mr. F. M. Wheeler, New York.

Blake Feed Pump, presented by the manufacturers.

6 inch New American Turbine, presented by Wm. Kennedy & Sons, Owen Sound, Ont.

Two Crown Water Meters, presented by the National Meter Co., New York, through Mr. M. Warnock, Toronto.

Rock Drill presented by Sullivan Machinery Co., New York, through Mr. A. E. Blackwood, '95.

Marine Gasoline Engine, presented by Canadian Fairbanks Co., Montreal.

Two engines with different types of valve, presented by Messrs. E. Leonard & Sons, London, Ont.

Bundy trap from American Radiator Co., through Messrs. Russell & Gifford.

Dunham steam trap from C. A. Dunham Co.

Sectional models of valves from American Radiator Co.

Sectional model Mason Reducing Valve by Russell & Gifford.

In addition to the above, other firms have materially assisted by offering apparatus at or below cost price, among whom may be specially mentioned, The Canadian Rand Drill Co., Sherbrooke, Quebec.

PHYSICAL LABORATORIES.

The optical laboratory is equipped with Weinhold optical benches and accessories for determining the constants of mirrors and lenses and for demonstrating the construction and use of telescopes, field glasses, microscopes, etc. There is also a full equipment of optical instruments including telescopes, microscopes, field glasses, comparators, spectrometers, level tester, photometers of various types, focometer, dynameter, cathetometer, polariscope, projecting lanterns, etc.

The photographic laboratory is supplied with several cameras for viewing, copying, enlargement and reduction, a spectroscopic camera and an electric blue printing machine and the necessary dark rooms.

The hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balances, Jolly balance, Mohr's balance, hydrostatic press, vacuum pumps, gauges, etc.

The heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat, expansion apparatus, air thermometer, apparatus for verification of Boyle's law and pressure and boiling point curve and for determination of the absolute expansion of mercury. Callendar's apparatus for determination of the mechanical equivalent of heat.

The acoustical laboratory is provided with sonometer, siren, forks ordinary and electric, Lissajous' and Melde's apparatus, organ pipes of various forms, manometric flame apparatus and a special equipment for work in architectural acoustics consisting of torsion chronograph, electropneumatic wind chest and standardized organ pipes and other accessories.

ELECTRICAL LABORATORIES.

Galvanometer laboratory:—The equipment of this laboratory is, in part, as follows:—A set of D'Arsanval galvanometers conveniently located at tables about the laboratory, a set of resistance boxes for use with the same; measuring instruments including ammeters, voltmeters, wattmeters, potentiometers and standard cells. Apparatus for the measurement of low resistance including a ductor and for high resistance including a megger, several Carey Foster outfits and a Roller bond tester. There are also experimental lines for practice in locating faults, photometer outfits with rotating devices and various types of arc lamps.

Another room is fitted more especially for calibration of electrical instruments for alternating and direct currents. About one hundred and twenty portable measuring instruments are available for students' use, also standard instruments, including Weston laboratory standards, Kelvin balances and a Wolff potentiometer, with which the portable instruments may be compared.

Machine laboratory:—This laboratory, occupying two large rooms, contains twenty-five dynamos and motors varying in capacity from two to twenty kilowatts, adapted for experiments illustrating the properties of compound shunt and series dynamos and motors, arc machines, etc. Switch-boards, numerous rheostats, lamp racks, starting boxes, circuit breakers, flexible cables, brakes, torsion dynamometers, tachometers, etc., are available for use with the machines.

This laboratory also contains two 15 kw., 25 cycle and two special 15 kw., 60 cycle General Electric polyphase revolving field alternators direct driven by motors, two rotary converters of 10 kw. and 5 kw. capacity, a 7½ kw. General Electric polyphase induction motor with slip ring rotor, Westinghouse three phase squirrel cage induction motors, Wagner single phase motor, Westinghouse single phase series motor, Westinghouse alternator, and several three phase and single phase induction motors; also transformers, reactive coils, and other details, as in the direct current section of the laboratory described above, for experiments on the properties of alternating currents and alternating current apparatus in general. A constant-current transformer with its load of six series arc lamps,a three-element oscillograph, for studying wave forms, a high potential transformer and a mercury arc rectifier may also be mentioned. The students are supplied with Weston, Westinghouse and Thomson portable instruments for measuring purposes.

A motor generator set is being installed comprising a 65 h.p. motor driving on the same shaft a 30 k.w. 110 volt d.c. generator and a 30 k.w. 60 cycle 110 volt alternator with direct connected enciter.

Magnetic laboratory:—A room is fitted with appliances for the study of saturation and hysteretic properties of samples of iron and steel, as well as a transformer for determining dielectric strength. The room also serves for exercise in winding models of direct current armatures, alternators, etc.

High potential transformer:—A 20 kw. transformer of 200,000 volts is being installed in a separate room.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the Chemistry and Mining building, on the first and second floors. The rooms are large and well lighted, and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accomodation for 112 students, each working space being supplied with water, gas and fume cupboard. The laboratory for quantitative analysis will accommodate 48 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 36 is provided for the students engaged in the study of technical chemistry; it is equipped with appliances for the preparation and testing of chemical products. A laboratory for fourth year students with accommodation for eight workers has just been fitted up. Each of these laboratories has its own balance room adjoining, furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis, and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. A new calorimeter room has just been equipped in the basement. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

ELECTROCHEMICAL LABORATORIES.

The Electrochemical laboratories which are situated in the Chemistry and Mining building are provided with special facilities for electrolytic work, including a large storage battery and electroplating dynamo with tanks as well as a complete set of apparatus and electrical measuring instruments. The experimental work on electric furnaces is performed in two rooms specially equipped for this purpose with rheostats and switchboard connections to a 120 kw. D.C. generator, which supplies the current required.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building, one has a floor space of 17 feet x 47 feet, and the other 28 feet x 37 feet. Adjoining each is a room 15 feet x 11 feet, with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances set on a concrete pier. Each of the laboratories contains a number of melting holes for crucible fusions, various gas furnaces both for crucibles and muffles, and two large brick muffle furnaces.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation room (19 feet x 13 feet) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

METALLURGICAL LABORATORY.

The metallurgical room is 40 feet x 21 feet and is equipped at present with a reverberatory furnace for roasting sulphide and arsenical ores, a water jacketted blast furnace for copper smelting, fume cupboard, lockers, tables, etc.

MILLING AND CONCENTRATING LABORATORY.

A detached building 72 feet x 70 feet in area, contains the milling and concentrating equipment. It is heated, lighted and supplied with power from the main building, and is divided into two parts. The greater part, with 72 feet x 53 feet floor space, and 22 feet high, contains the milling and concentrating equipment. The machinery for the former operations consists of a five-stamp battery erected on concrete foundations. Challenge ore feeder, amalgamating plates, Wilfley table, a clean up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore. This is driven by a 15 horse power motor.

The concentrating part consists of a set of five revolving trommels for wet screenings, four three-compartment jigs, a trough classifer delivering three products, and two revolving buddles, Wilfley Slimer, Deister Slimer, Richard's Pulsating Classifier, Richard's Pulsating Jig, a Behrend Dry Concentrator, a dry sizer, besides experimental apparatus of various kinds for experimenting on the falling rates of ore particles, the settling of slimes, surface tension action in grease and flotation methods, etc. The waste products run to the same settling tanks as the tailings from the stamp battery. The ore is handled by a travelling crawl. All the machinery in this part is driven by a 10 horse power motor.

The lower floor has been fitted up for lixiviation work with apparatus for the treatment of sands and slimes, different types of filter press, vacuum plant agitators, etc.

The plant throughout is intended mainly for experimental purposes and is made of such a size that numerous experiments can be carried out on small quantities of ore. Tests can also be made on lots of one or two tons.

The other part of the milling building with 72 feet x 17 feet floor space and 15 feet high, is divided into four separate rooms. The largest of the four rooms has an area of 476 square feet and is devoted to the crushing and pulverizing of the ores preparatory to their treatment in the milling and concentrating room. It is isolated in order to confine the dusty operations as far as possible to this one room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16 inches by 12 inches, platform scales for weighing ore, a jib crane, pulleys, buckets, etc., for handling the rock. An adjoining room contains a 30 h.p. motor for driving the machinery of the crushing department, and storage bins for ore, work bench, etc. Another room with 17 feet x 15 feet floor space, is furnished with a magnetic separator of the Rowan-Wetherill type, driven by its own motor.

One room of the same size as the above remains available for future additions.

STRENGTH OF MATERIALS LABORATORY.

This laboratory is intended for the scientific and commercial testing of materials of construction such as iron, steel, timber, concrete and masonry.

It is supplied with the following:

An Emery 50-ton hydraulic machine, built by Wm. Sellers & Co., of Philadelphia, for making tests in tension and compression.

A 100-ton screw power machine, built by Riehle Bros., Philadelphia. It is designed for making tests in tension, compression, shearing and cross-breaking and will take in posts 12 feet long and beams up to 18 feet in length.

A Riehle 10-ton screw power universal testing machine.

A Riehle 50-ton screw power universal testing machine.

A 15-ton single lever-machine, built by J. Buckton & Co., Leeds, England.

A torsion machine, built by Tinius Olsen & Co., Philadelphia, for testing the strength and elasticity of shafting. This machine will twist shafts up to 16 feet in length and 2 inches in diameter.

A hand power torsion machine of simple mechanical construction, specially designed for the testing of short shafts of a maximum diameter of one inch.

A Riehle transverse testing machine of 5,000 pounds capacity, adapted to specimens up to 48 inches in length.

A Riehle compressometer, with spherical seat attachment for the adjustment of specimens having slightly non-parallel faces. This compressometer will receive specimens up to 10 inches in length.

An Olsen compression micrometer of standard type.

A 20,000 pound Olsen, hand power, wire testing machine, specially fitted for testing wooden columns with both fixed and pivoted ends.

A Riehle abrasion cylinder, built to the standard required by the National Brick Makers ' Association, adopted in 1901.

A Page Impact Machine for testing the toughness of road metals.

A diamond core-drill for preparing specimens for the Page impact machine.

A two-cylinder Deval abrasion machine for testing the wear-resisting properties of road materials.

A Berry strain-gauge for spans of 3 inches and 8 inches.

A Nalder dividing engine. This may be used either for the precise division of scales or for the calibration of instruments intended for refined measurement.

A large number of extensometers of the usual degree of precision. These include the Bauschinger, Martens, Unwin, Ames, Riehle, Johnson, Henning (recording) and other types. In addition there are the usual scales, micrometers, telescopes and reflectors, voltmeters for the determination of metallic contract, and such other appliances as are necessary in the making of precise measurements.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labour. It is also supplied with the necessary appliances for making ordinary repairs and for making apparatus for special experiment and original investigation.

CEMENT TESTING LABORATORY.

This laboratory is fitted with all the ordinary moulds, sieves, balances, burettes, steaming and drying tanks, tables, and other appliances necessary in making the usual physical tests of a Portland cement. It is also supplied with completely equipped cabinets for individual work. In addition there are the following:—

A Riehle 2,000 lb. machine fitted for either tension or compression.

A 2,000 lb. Riehle shot machine for tension.

A 2,000 lb. Fairbank's shot machine for tension.

A 1,000 lb. Olsen automatic shot machine fitted for tests in either tension or cross breaking.

An Olsen soapstone moist closet of modern design.

METEROLOGICAL LABORATORY.

The department of surveying and geodesy is provided with all the ordinary field instruments, such as transits, levels, compasses, micrometers, sextants, planimeters, plane tables, tapes, chains, etc., with which is carried on the instruction in practical field operations as detailed elsewhere.

A small laboratory is also established in the basement of the observatory described below, containing the necessary instruments for the refined measurements of geodetic surveying; as, a standard yard and metre, a Rogers 10 foot comparator, a Kater's pendulum with vacuum chamber, a level trier, micrometer, microscopes, etc.

The geodetic observatory in connection with this department is used for the instruction of students of the fourth year in taking observations for time, latitude, longitude, and azimuth by the precise methods used in connection with a geodetic survey. It contains a 10 inch theodolite and zenith telescope by Troughton & Simms; an astronomical transit instrument and an 8 inch theodolite by Cooke; an electro-chronograph; a Howard astronomical clock; a Dent sidereal break-circuit chronometer; arithmometers, etc.

GEOLOGICAL AND MINERALOGICAL LABORATORIES.

In the Chemistry and Mining building on College Street the University possesses a modern laboratory for Geology and Mineralogy.

Courses are given in laboratory work, especially in personal examination of type sets of rocks, fossils, minerals and crystal models. These laboratory exercises serve to illustrate the introductory didactic instruction.

For the encouragement of pure crystallography the laboratories are supplied with goniometers of the various types, crystal models, appliances for the cutting of oriental crystal sections and for the physical examination of the same. Practical petrography is carried on in rooms provided with type sets of rocks, both macroscopic and microscopic. Advanced students are taught to make thin sections of rocks and fossils and to study them microscopically. For students in Mining a laboratory course in the interpretation of geological maps and sections is provided. Typical mining regions are studied in detail and an opportunity is afforded for the examination of specimens illustrating economic geology.

The laboratory for the preparation of thin sections of rocks, minerals and fossils is provided with electric diamond saws and grinding appliances for the various types of work incidental to the preparation of thin sections and museum material.

A room is also provided for advanced work in cartography and geological surveying.

The departments possess 28 petrological microscopes and 5 of other types so that it is now possible to provide advanced students with instruments and sets of thin sections for their own especial use. The blowpipe laboratory contains 156 lockers, especially designed for apparatus for students.

MUSEUM.

The Geological and Mineralogical Museum of the University is open to students of the Faculty of Applied Science, and is also accessible to the general public from 9 to 5. p.m. throughout the year.

The Museum is situated in the south-east corner of the ground floor of the Chemistry and Mining building, and may be entered from the door at that corner of the building.

The southern half of the room is occupied by the cases of the palæontological collection in which are arranged a large series of fossils. These specimens are placed so as to display together the great groups of animals, while the minor divisions are based on stratigraphical grounds. Particularly worthy of note are the fine series of Crinoids and Cystids and the type specimens of Cambrian fossils from Eastern Canada. A large part of this collection is due to the generosity of Sir Edmund Walker and Sir Wm. Mackenzie. On the walls of the museum have been placed some excellent specimens of large extinct vertebrates.

To the north of the fossil collection is the Ferrier Cabinet of Minerals containing good examples of nearly all the minerals known to science, as well as a special case with specimens of the various minerals from the Cobalt Mining District.

The northern part of the room is occupied by twenty cases exhibiting all the important rocks both igneous and sedimentary which go to make up the crust of the earth.

Around the walls are placed cases containing the chief economic mineral products arranged in accordance with their practical application to human activities. This collection is particularly rich in specimens from Ontario localities and includes most of the material formerly exhibited in the Engineering building.

LIBRARY.

Rooms have been set apart in the Engineering and the Chemistry and Mining buildings for the housing of such periodicals and other literature of the University Library as is of special interest to the students of this faculty.

SOCIETIES.

THE ENGINEERING SOCIETY OF THE UNIVERSITY OF TORONTO.

Officers for 1911-1912.

President	J. E. Ritchie.
1st Vice-President	W. T. Curtis.
Vice-Pres. Civil & Archl. Secs	F. S. Rutherford.
" *Mechanical & Elec. Secs*	M. F. Verity.
" *Chemistry & Mining Secs*	G. M. Smyth.
Recording Secretary	I. M. Macdonald.
Corresponding Secretary	C. C. Rous.
Treasurer	H. R. MacKenzie.
Permanent Secretary	H. Irwin, B.A.Sc.
Curator	G. Rankin.
Fourth Year Representative	H. A. Hawley.
Third Year Representative	H. N. Macpherson.
Second Year Representative	T. W. Crane.
First Year Representative	To be elected.
Senior Varsity Representative	J. A. P. Marshall.

The Society meets every second Wednesday during the academic year. Papers are read, and discussions are held on engineering subjects. The Society publishes a pamphlet monthly during the year, containing the best papers read at the meetings. A supply department is conducted by the Society, on a co-operative plan through which instruments, drafting supplies, stationery, etc., may be purchased at a low cost.

UNIVERSITY OF TORONTO ELECTRICAL CLUB, 1911-1912.

President	F. C. De Guerre.
Vice-President	R. J. Allen.
Secretary-Treasurer	P. G. Welford.
Councillors	C. A. Webster. R. A. Story. C. C. Rous.

The Society meets every second Thursday evening during the academic year for the discussion of papers relating to mechanical and electrical engineering problems too technical for consideration in the Engineering Society. The membership is limited to members of the senior and final years.

ATHLETIC ASSOCIATION OF THE FACULTY OF APPLIED SCIENCE.

EXECUTIVE COMMITTEE, 1911-1912.

Honorary President	Dean Galbraith.
President	W. H. Wylie.
Vice-President	F. J. Mulqueen.
Secretary-Treasurer	W. J. T. Wright.
Fourth Year Representative	A. Wardell.
Third Year Representative	A. G. Gray.
Second Year Representative	D. B. Gardner.
First Year Representative	M. Levy.

The Athletic Association has full control over all athletic clubs using the name of the Faculty of Applied Science. The Executive Committee has power to suspend any one from the privileges of membership in the Association for any breach of its regulations, and controls the finances of all athletic clubs in the aforesaid Faculty. The annual membership fee of this Association is fifty cents.

No other moneys are collected for the support of athletics in the Faculty of Applied Science without the sanction of the Executive Committee.

RUGBY FOOTBALL.

The Mulock Cup, which was presented by Sir Wm. Mulock, M.A., LL.D., to the University of Toronto Rugby Football Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

RUGBY FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers 1911-1912.

Honorary President	Dean Galbraith.
President	F. J. Mulqueen.
Manager senior team	F. M. MacDonald.
Captain senior team	T. W. Brackenreid.
Manager junior team	J. C. Acton.
Captain junior team	J. W. Crane.

ASSOCIATION FOOTBALL.

In order to encourage Association Football on the College campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

(Winners of Faculty Cup.)

Officers for 1911-1912.

Honorary President	Prof. C. H. C. Wright.
President	C. P. Sills.
Manager of Seniors	J. T. King.
Captain of seniors	W. MacTavish.
Manager of juniors	C. A. Bell.
Captain of juniors	C. MacPherson.

HOCKEY.

The trophy which is competed for annually among the Colleges in hockey is known as the Jennings Cup, and is the gift of the late W. T. Jennings, Mem., Inst. C.E.

HOCKEY CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers for 1911-1912.

Honorary President	Dr. W. H. Ellis.
President	F. J. Mulqueen.
Vice-President	J. M. Patton.
Manager senior team	W. J. T. Wright.
Manager junior team	E. P. Cameron.

UNIVERSITY CURLING CLUB.

Officers for 1911-1912.

Honorary President	President Falconer.
President	W. M. Treadgold.
Vice-President	C. R. Redfern.
Secretary-Treasurer	E. A. Ternan.
Graduate Representative	J. W. Deyell.
School Representative	J. M. Gibson.
Arts Representative	J. W. Gordon.
Knox College Representative	C. H. Best.

TRACK CLUB.

Officers for 1912-1913.

Honorary President	P. Gillespie.
President	J. M. Gibson.
Secretary-Treasurer	W. J. T. Wright.
Fourth Year Representative	J. J. Phillips.
Third Year Representative	C. V. Perry.
Second Year Representative	M. Levy.
First Year Representative	To be elected.

OFFICERS OF THE 2nd FIELD COMPANY CANADIAN ENGINEERS.

Officer Commanding	Major S. P. Biggs.
Captain	T. C. Irving.
Lieutenant (Acting Adj.)	S. H. Fellowes.
Lieutenant	G. M. Bramfitt.
Lieutenant	E. Peplar.
Medical Officer	J. W. Barton, M.D.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION.

Directorate.

Honorary President	R. A. Falconer, D.Litt., LL.D.
President	Prof. A. T. DeLury.
Vice-President	J. M. Wood.
Secretary-Treasurer	Jas. W. Barton, M.D.

Directors.

Prof. C. H. C. Wright.
Dr. W. B. Hendry.
A. M. German.
M. Brock.
G. G. Kilpatrick.
B. Frith.

The Athletic Association is now the paramount body in University athletics and has entire jurisdiction over the athletic clubs using the University name, and over their finances, members and policy, subject to the University authorities. Henceforth no financial agreement can be entered into by any such club without the sanction of the Directorate. No expenditure of any kind in connection with any such club can be made without the written order of the Secretary-Treasurer of the Directorate.

THE INDUSTRIAL CHEMICAL CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers for 1911-1912.

Honorary President	Dr. Ellis.
Honorary Vice-President	Professor Bain.
President	E. R. Williams.
Vice-President	A. R. Bonham.
Secretary	A. W. Sime.
Treasurer	W. D. Morris.
Fourth Year Representative	J. L. Gooderham.
Third Year Representative	G. E. Clarkson.

The Industrial Chemical Club was organized in 1909 and consists of graduates and undergraduates of Departments 5 and 6. Its object is to promote the study of industrial chemistry and chemical engineering. Illustrated lectures preceded by an informal dinner and short musical program, are held fortnightly, and on the following day an excursion is made to one or other of the industrial chemical concerns located in the city or vicinity.

BASKETBALL CLUB.

Season 1911-1912.

Honorary President	T. R. Loudon.
President	C. H. Cunningham.
Manager of seniors	C. F. Elliott.
Manager of juniors	M. Levy.

FACULTY OF APPLIED SCIENCE.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Y.M.C.A. of the Faculty of Applied Science was organized January 27th, 1905, and forms an integral part of the University of Toronto Y.M.C.A., which is a federation of the Association of the various Colleges and Faculties of the University. The object of the Association is to develop a true Christian manhood and to help the students in whatever way possible.

Honorary President	J. Roy Cockburn, B.A.Sc.
President	A. J. Wright.
Vice-President	P. L. Fancher.
Treasurer	G. C. Storey.
Recording-Secretary	B. C. Tomlinson.

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the University, at a cost of from four dollars and a half a week upwards for comfortable lodging with board; or rooms may be rented at a cost from one dollar and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

UNIVERSITY RESIDENCES.

By the generosity of Mr. and Mrs. E. C. Whitney and other friends, the University can now offer to some hundred and fifty men the peculiar advantages of residential life and excellent accommodation within its own grounds. The Residence, opened in November, 1908, consists of three Houses situated on the north side of Hoskin Avenue, opening upon a quadrangle, the fourth side of which is formed by Devonshire Place. They stand about two hundred yards to the north of University College and of the University Dining Hall and close to the University Gymnasium and Athletic Field. The buildings are known as the South, East and North Houses.

Each House contains twenty-four single rooms, one single suite, one double room and eleven suites, a suite comprising a study and two bed rooms. A large room in each building, with an open hearth and a library, has been set aside as a common room. A lavatory with hot and cold shower baths is provided for every eight men. The buildings are heated by steam and lighted by electricity.

The University supplies the table, chairs, book-case, chiffonier, bed, mattress, pillows, linen and window shades for each room; it is prepared to furnish a drop-light for a nominal rental.

Each occupant is charged $2.50 room-rent per week, payable to the Bursar four weeks in advance. The charge for each single suite is $3.50 per week. These charges cover heat, light, house-service, house-laundry, and the use of the telephone. There is no separate dining hall connected with the Residence, but board may be obtained at the adjacent University Dining Hall for $3.00 per week.

Applications for rooms must be made in writing to the Secretary of the Residence Committee (address the Registrar's Office) and must be accompanied by a deposit of $5.00. This deposit will be returned if the application be not granted or if the application be withdrawn in writing before September 8th. It will be returned in full at the end of the College year if the room key be given back and the room and furniture left in a satisfactory condition. The following principles govern the allotment of rooms: (i) No student, who as the result of the annual spring examinations is not assured of being able to proceed to the subsequent year, will be admitted into the Residence. (ii) The rooms in each House will be distributed proportionately between the various Faculties and Years. (iii) Rooms will be reserved for members of the incoming First Year until September 18th. (iv) Applications will be considered in order of priority.

The University lays down three general rules, designed to prevent hazing. the use of intoxicants and gambling. The students in each House shall elect a House Committee, which is entrusted by the University with the making and enforcing of any other needed rules and with the maintenance of order. A member of the Faculty resides in each House to act as friend and adviser to the men in residence.

GYMNASIUM AND ATHLETIC GROUNDS.

"The University gymnasium was completed and equippped in 1893. It is fully provided with the best and most modern appliances for physical culture, and contains a running track, shower baths and swimming bath, besides the necessary dressing rooms and other conveniences. A competent instructor in gymnastics is in constant attendance to superintend and direct the exercises of students. In addition to the lawn in front of the Main University Building and a campus in the rear, a large plot of ground on Devonshire Place has been set apart as an athletic field. By this addition the facilities for football, cricket, tennis and other out door athletic sports are doubled, as compared with previous accommodation; and by these grounds, in conjunction with the gymnasium, ample opportunity is afforded to all students for healthful exercise and physical development. To assist in meeting the expenses of the gymnasium, a nominal annual fee is imposed on those who avail themselves of its advantages. The supervision of all athletic matters has been entrusted by the Council to an Athletic Board, consisting of six members appointed from the Faculty and officers of the Athletic Association. All applicants of clubs for the use of grounds must be made annually to this Board. All such applications must be accompanied by a list of officers. In the case of new clubs the list of officers must be accompanied by particulars as to the organization and objects of the club making application."

STUDENTS' UNION BUILDING.

"In 1894 additions were made to the front of the building in which the gymnasium is situated, consisting of a large hall for public meetings, a reading room and committee rooms. This additional accommodation is available for the work of the various students' societies, and for academic purposes. Applications for the use of rooms, accompanied by a list of officers and a copy of the constitution of the society making application, must be made, through the President, to the joint committee of the Councils on Gymnasium and Students' Union Building, at the beginning of the season, or from time to time as occasion requires. Arrangements have also been made by which recognized societies may obtain the use of committee rooms on application to the janitor of the Students' Union Building."

STUDENTS IN ATTENDANCE.

SESSION 1911-1912.

First Year.

MATRICULATED STUDENTS.

1	Anderson, A. C.	Toronto.
2	Arthur, M. R.	Sudbury.
1	Austin, F. D.	Peterborough.
7	Ball, F. S. W.	London.
7	Banbury, T. R.	Ingersoll.
1	Bartlet, F. A.	Windsor.
7	Beacock, V. A.	Toronto.
7	Bennett, P.	Calgary, Alta.
7	Bonus, W. H.	Peterborough.
6	Breithaupt, J. E.	Berlin.
3	Breuls, H. E.	Toronto.
5	Brodie, W. P.	Toronto.
1	Brooks, W. J.	Toronto.
1	Brouse, E. D.	Toronto.
1	Brown, R. R.	Nelson, B.C.
1	Brown, W. G.	Acton West.
1	Buchanan, F. M	Blenheim.
2	Carmichael, F. N. D.	Toronto.
3	Carroll, H. M.	Richmond Hill.
7	Carswell, J. M.	Toronto.
7	Chandler, F. H.	Stratford.
1	Chavignaud, L.	Lambton Mills.
3	Clarke, W. T.	Sardis, B.C.
1	Cockburn, G. A.	Toronto.
1	Cockburn, R. M.	Toronto.
7	Code, W. W.	Toronto.
1	Cook, J. D.	Toronto.
1	Crealock, A. B.	Toronto.
3	Cunningham, J. N.	Moose Jaw, Sask.
7	DaCosta, W. R. C.	Toronto.
2	Dafoe, E. R.	Calgary, Alta.
1	Daniel, N. H.	Port Hope.
7	Davey, C. G.	London.
7	Davidson, G. P.	Toronto.
4	Davidson, J. J.	Toronto.
7	Dean, W. A.	Toronto.
4	Denison, M. L.	Toronto.
1	Dobbin, W. L.	Toronto.
1	Downey, G. A.	Orillia.
7	Elliot, R. V.	Norwich.
7	Ellis, E. W.	Toronto.
2	Emmerson, E. R.	Port Arthur.
1	Evans, A. C.	Toronto.
1	Falconer, H. S.	Shelburne.
5	Feather, S.	Brantford.
1	Field, B. L.	Mitchell.
7	Fleming, A.	Toronto.
5	Frankel, C. M.	Toronto.
1	Fraser, W.	Brantford.
1	French, W. G.	Toronto.
7	Fulton, W. J.	Toronto.
1	Gaboury, L. F.	Toronto.
1	Galbraith, R. D.	Toronto.
7	German, D.	Beachville.
3	Gibbs, W. R.	Toronto.
2	Gitson, J. S.	Toronto.
6	Glass, L. G.	London.
1	Gooderham, G. A.	Toronto.
4	Graham, T. S.	Toronto.
1	Grange, E. R.	Toronto.
3	Gray, J.	Victoria, B.C.
1	Gurofsky, M.	Toronto.
2	Haas, M. S.	Toronto.
2	Hall, W. T.	Toronto.
1	Hanlon, J. E.	Guelph.
7	Harrow, L. W.	Toronto.
1	Hewson, R. R.	Toronto.
5	Hicks, F. F.	Newtonbrook.
2	Higgins, L. T.	Toronto.
1	Hogarth, C. E.	Hamilton.
7	Ireland, T. P.	Hamilton.
7	Ironside, G.	Bryanston,
1	Irwin, W. E.	Stratford.
1	Jackson, C. W. H.	Coboconk.
7	Johnson, H. H. G.	Toronto.
1	Johnston, G. W. F.	Lethbridge, Alta.
7	Karn, H. C.	Woodstock.
2	Kayser, E. A.	Toronto.
7	Kennedy, J. A.	Stratford.
7	Kribs, R. L.	Hespeler.
1	Laidlaw, R. E.	Durham.
1	Levy, M.	Toronto.
3	Lloyd, R. H.	Wingham.
1	Lee, L. A.	Toronto.
5	Macdonald, G. G.	Toronto.
2	Macdonell, I. M.	Toronto.

3 MacTavish, W. I......Toronto.
2 McCaffrey, W. R......Toronto.
7 McCort, C. R..........Bolton.
1 McDonald, K. D. Carlyle, Sask.
1 McGie, A. G........Belleville.
1 McGugan, D. F.........Ekfrid.
1 McKague, E. V.......Toronto.
7 McNamara, C. J......Toronto.
7 Manning, T. R........Toronto.
7 Meitz, W. H.........Pembroke.
1 Mendizabel, A. R.
Oruro, Bolivia, S. A.
1 Mitchell, G.........Hamilton.
7 Mollard, C. W...Watrous, Sask.
1 Morris, B. M........Pembroke.
7 Neelon, J. H....St. Catharines.
1 Nelson, R. H....Port Colborne.
3 Newcombe, J. C......Toronto.
1 Nicklin, H. R........Millbank.
1 Nicklin, H. S.............Acton.
7 Olivier, J. H.A. Three Rivers,Que.
6 O'Reilly, W. H ....Toronto.
3 Peck, H. M...........Barrie.
3 Peck, W. R.............Barrie.
1 Pfrimmer, V. R......Stratford.
1 Porter, C. F..........Windsor.
1 Porter, J. E..........Wingham.
7 Purdy, W. F. P.....Wardsville.
1 Raley, W. E..Lethbridge, Alta.
6 Ramsay, H.........Owen Sound
7 Rance, C. C..........Toronto.
1 Redman, W. B......Birchcliff.
7 Reed, H. R............Eglinton.
3 Relyea, J. D..........Prescott.
2 Rice, W. C.........New Dundee.
7 Richmond, J...... Smith's Falls.
7 Robertson, A. S.....Walkerton.
7 Rosor, W. F..........Toronto.
7 Ross, A. C...........Listowel.
7 Savage, E. W............Navan
1 Scott, E. H...........Toronto.
1 Scott, R. G.....Trenville, Alta.
1 Scott, W. B..........Toronto.
1 Sharpe, E. W. C.......Brooklyn.
1 Shaw, J. H..........Toronto.
7 Shier, W. G...Vancouver, B. C.
1 Sheehy, J. S......Peterborough.
1 Simmons, J. F. L.....Brantford.
7 Simpson, C. N........Toronto.
7 Skinner, J. L..........Toronto.
7 Smith, A. G..........Toronto.
7 Smith, C. A......Worthington.
3 Smyth, A. H........Strathroy.
1 Speight, W. A........Markham.
1 Speirs, R. M..........Toronto.
7 Steel, W. A..........Belleville.
2 Stewart, H..........York Mills.
2 Stitt, J. B.........Haileybury.
7 Stone, J. D...........Chatham.
1 Storms, F. S..........Toronto.
7 Suhler, A. N....Point Edward.
6 Swinnerton, A. A......Toronto.
7 Taylor, A. N......Winchelsea.
3 Taylor, H C............Toronto.
6 Thomas, A. M........Toronto.
7 Thompson, E. W......Toronto.
1 Tom, J. A............Goderich.
2 Tomlinson, B. C....Willowdale.
1 Trebilcock, J. A.......Toronto.
1 Tremayne, J. E....Sutton, West.
4 Tyrwhitt, R..........Toronto.
5 Uffelman, W.........Waterloo.
3 Van Etter, A.......Wardsville.
3 Verity, W. B..........Toronto.
2 Wallace, H. D........Toronto.
1 Wallis, J. H......Peterborough.
7 Ward, A. L..... Niagara Falls.
7 Ward, F. W..........Toronto.
5 Watson, L. T..........Berlin.
7 Wedgewood, S. M.....Toronto.
1 Weir, F. E...Prince Albert, Sask.
1 Wheelock, C. H.....Orangeville.
7 Wickson, G. W..........Bronte.
2 Wilcock, W. S.......Flesherton.
1 Williams, J. N.......Burlington.
1 Wilson, J. C.........Wingham.
7 Wilson, R............Markham.
4 Wilson, W. S.........Hanover.
1 Withrow, L...Moose Jaw, Sask.
1 Wood, H. A..........Toronto.

NON-MATRICULATED STUDENTS.

1 Adlard, L............Toronto.
2 Allan, W. N........Nelson, B.C.
1 Allen, H. C...........Toronto.
3 Anderson, H. M.....Strathroy.
7 Armstrong, R. K.......Oakville.
7 Ball, W. V...........Toronto.
7 Bricker, G. G........Waterloo.
1 Brown, H. R..........Toronto.
1 Brown, L............Toronto.
5 Brown, N. B..........Toronto.
7 Budd, H. C.............Mull.
4 Burden, H. J.........Toronto.
4 Burness, K. C........Toronto.
1 Burns, J. L.....Vancouver, B.C.
4 Catto, R. W..........Toronto.
1 Colby, W. D..........Chatham.
2 Crane, J. W.......Orange, N.J.
1 Creamer, E.W..QuAppelle, Sask.
7 Dandeno, L. G.......Hespeler.
3 Delisle, L.....Chicoutimi, Que.
1 Deverall, E. V........Toronto

7	Dibblee, J.	Toronto.
1	Dickson, W. L.	Brantford.
7	Dobbin, C. W.	Waterloo.
1	Doherty, C. A.	Erin.
4	Edwards, G. R.	Toronto
7	Fallis, M. P.	Cadmus.
7	Gould, W. H. R.	Uxbridge.
1	Gray, G. S.	Meaford.
1	Hastings, C. E.	Toronto.
1	Hayward, C.	Toronto.
1	Hermon, J. W.	Vancouver, B.C.
3	Hill, W. G.	Toronto.
7	Holmes, T. C.	Brussels.
7	Hubbert, S.	Toronto.
7	Jones, R. E.	Toronto.
1	Jupp, E. H.	Orillia.
3	Kidd, W. S.	Burritts Rapids.
7	King, G. F.	Simcoe.
7	Klingensmith, C. R.	Toronto.
5	Kohl, H.	Toronto.
4	Korn, N. H.	Toronto.
7	Lawrence, G. W.	Port Dalhousie.
1	Little, A. M.	Toronto.
1	Lockhart, W. E.	Newcastle.
4	Luno, E. H.	Swansea.
1	Lye, R. G.	Port Colborne.
7	Macaulay, A. H.	Vancouver, B.C.
7	Macfarlane, A. H.	Dawson, Y.T.
2	Macpherson, C. K.	Goderich.
3	McBride, R. B.	St. Catharines
7	McDonald, J. P.	Brantford.
3	McGie, W. R.	Belleville.
7	McLarty, J. E.	Toronto.
1	McLaughlin, J.	Ottawa.
1	Martin, A. E.	Chatham
1	Maxwell, G. D.	New Westminster, B.C.
7	Meyer, W. R.	Victoria, B. C.
1	Mogan, J. T.	Toronto.
7	Monteith, E. M.	Toronto.
4	Morris, A.	Toronto.
5	Morris, W. D.	Warwick, West.
1	Neilson, M. A.	Toronto.
7	Paterson, W. B.	Denfield.
3	Payne, A. N.	Toronto.
1	Pearce, P. L.	Yorkton, Sask.
2	Peterkin, S. M.	Toronto.
1	Powell, N. L.	Delhi.
1	Rankin, G.	North Bay.
3	Reid, F. G.	Belleville.
1	Reid, J. M.	Vancouver, B.C.
1	Richardson, A. A.	Peterborough.
4	Rose, J. T.	Toronto.
1	Seaman, R.	Chantry.
7	Seymour, N. F.	Essex.
1	Sifton, L. S.	Moose Jaw, Sask.
2	Simpson, L. F.	Hamilton.
1	Snow, G. B.	Toronto.
5	Stark, W. H.	Toronto.
1	Stratford, G. S.	Brantford.
2	Stroud, J. E. C.	Bridgetown, B.W.I.
1	Vance, J. A.	New Hamburg.
1	Vezina, L. P.	Chicoutimi, Que.
1	Walker, E. C.	Richard's Landing.
1	Wallace, W. W.	Merritton.
3	Waters, D. M.	Belleville.
3	Webster, D. B.	Toronto.
7	Widdicombe, A. E.	St.Catharines.
7	Wilson, F. C.	Ruthven.
7	Woollard, M. S.	Toronto.

Second Year.

6	Acton, J. C.	Toronto.
1	Adsett, F. C.	Guelph.
1	Alton, J. L.	Lucknow.
2	Andrews, F. C.	Hamilton.
7	Armer, C. E.	Toronto.
1	Bedard, E. L.	Courtright.
1	Bedard, H. J.	Courtright.
1	Belcher, J. T.	Toronto.
7	Bemrose, B. W.	Bradford.
1	Bennett, S. G.	Toronto.
1	Binns, P. V.	London, Eng.
7	Birrell, A. L.	Toronto.
1	Black, A. P.	Eglinton.
7	Black, H. M.	Acton West.
1	Blyth, J. M.	Orchard.
1	Bower, J. H. W.	Dwyer Hill.
1	Boyd, M. de G.	Bobcaygeon.
3	Brown, H. H.	Port Hope.
7	Brown, W. D.	Chatsworth.
2	Cameron, E. P.	Niagara Falls, Ont.
7	Campbell, H. A.	Toronto.
1	Campbell, D. H.	Winnipeg.
3	Campbell, H. M.	St. Catharines.
1	Campbell, J. J.	Galt.
2	Campbell, P. G. C.	Peterboro.
6	Candee, C. N.	Toronto.
1	Cannon, F. J.	Toronto.
2	Carter, J. M.	Toronto.
7	Cavers, J. P.	Toronto.
1	Christie, R. M.	Edmonton, Alta.
5	Clark, J. E.	Toronto.
1	Code, W. W.	Dauphin, Man.
1	Cotton, C. P.	Toronto.
3	Courtice, E. D. W.	Clinton.
1	Crashley, J. W.	Toronto.

7 Crawford, A. W..........Sarnia.
1 Cuthbertson, W..........Perth.
1 Dalton, G. F..........Ottawa.
1 Davidson, R. D......Alliston.
1 Davison, R. F..Bridgewater, N.S.
2 Delahay, W. A........Ottawa.
1 Douglas, F. W........Toronto.
7 Edwards, H. C........Toronto.
7 Elliott, H. F..........Norwood.
1 Elliott, J. A........Nelson, B.C.
2 Ellis, S. D.......Victoria, B.C.
1 Eyres, H. E.....Calgary, Alta.
1 Falls, O. M...........Wiarton.
1 Fancher, P. L.........Florence,
7 Flannery, D. T......North Bay.
1 Fleming, G. O........Toronto.
2 Fleming, J. S...........Cobalt.
1 Ford, J. W. H...Vancouver, B.C.
1 Foreman, J. L.....Collingwood.
7 Franklin, H. J.........Toronto.
5 Frost, J. G. G...........Tweed.
1 Fuller, C. H. R........Toronto.
1 Gale, W. D....Waterville, Que.
1 Gardner, D. B.........Toronto.
1 Geale, C. N.........Peterboro.
7 Gill, E. I....Victoria Harbour.
2 Gill, J. R.............Sudbury.
1 Gouinlock, R. W......Toronto.
1 Gray, E. D......Vancouver, B.C
7 Gray, G. D.........Waterford.
1 Greer, G. H.....Lashburn, Sask.
7 Grierson, C. I..Strathcona, Alta.
7 Griffiths, G. E........Thorold.
2 Halford, D. S.........Toronto.
3 Hall, W. H..........Peterboro.
3 Hally, G. H...........Toronto.
1 Hanna, J. J.......Calgary, Alta.
1 Hawes, H...........Toronto.
1 Hayman, L. T.........London.
4 Heaton, H. A.........Toronto.
1 Hogarth, B. B....Brandon,Man.
5 Holden, A. J.........Woodburn,
6 Hooey, H. R.........Toronto.
7 Hopkins, H. R.....Burlington.
2 Hughes, B. H..... Padston, Eng.
4 Hügli, E. E. H...Winnipeg, Man.
1 Hustwitt, S. A........Toronto.
7 Hutcheson, F. W....Huntsville.
2 Hutchings, W.........Toronto.
7 James, R. C...........Guelph.
7 Jannati, A. S...Bombay, India.
7 Jefferson, K. A....Arcola, Sask.
1 Johnson, R. P........Toronto.
7 Jones, C. M.........Toronto.
2 Jones, R. D..........Toronto.
7 Kamman, J. I...Rochester, N.Y.
1 Kay, J..............Toronto.

1 Keefer, N. G..........Toronto.
3 Kerby, H. S......Calgary, Alta.
7 Kerr, J. A...........Peterboro.
7 Kewin, G. E..........Toronto.
1 Knight, J. A.............Bala.
2 Lang, S. A............Toronto.
7 Latimer, C. W.Penticton, B.C.
1 Leach, H. O........Taber, Alta.
1 Lindsay, R. E...........Bolton.
7 Longworthy, W. E.Regina, Sask.
1 Lount, C. T..........Toronto.
5 Lye, O. G............Toronto.
2 Macaulay, G. B........Murray.
1 Macdonald, C. A....Ridgetown.
2 Macdonald, C. E.......Toronto.
2 Macdonald, W. A.......Cobalt.
3 MacKendrick, B..........Galt.
7 Mackenzie, A. M.......Guelph.
2 MacKenzie, H. J....Woodstock.
1 Macpherson, H. E...St. Thomas.
1 Macpherson, H. N. Regina, Sask.
1 McCaw, D............Welland.
1 McDonald, R. C........Ripley.
7 McIntyre, J. S.......Peterboro.
7 McLaren, D. L....Drummond.
2 Mansell, G. R.........Toronto.
7 Marshall, J. A.......Hamilton.
1 Marshall, J. A. P.....Victoria.
7 Martin, E. T..Waddington, N.Y.
7 Mason, F. H.........Uxbridge.
7 Matthews, R. G.....Brantford.
3 Maxwell, H. W......St. Marys.
1 Mechin, F. C....Winnipeg, Man.
1 Millar, W. G.........Toronto.
1 Miller, A. S.........Brighton.
7 Milligan, W. E........Toronto
2 Mills, F. L............Toronto.
7 Mills, P..............Toronto.
1 Mitchell, J. S.........Lucknow.
1 Montague, J. R...Niagara Falls,
6 Morrison, D......Bowmanville.
2 Muir, J. M...........Toronto.
1 Mullins, G. J.........Toronto.
3 Munro, D. L..........Toronto.
1 Muntz, E. P..........Toronto.
1 Murphy, D. E.
New Westminster, B.C.
7 Nichols, J. A..........Ingersoll.
7 Nicholson, C. L.......Toronto.
1 Noecker, C..........Waterloo.
1 O'Connor, E. B.......Toronto.
7 O'Donnell, L.........Toronto.
1 Ogilvie, T. H...........Ottawa.
1 Omand, W.M......Regina, Sask.
7 Owens, J. A........Vernon, B.C.
1 Parker, A. H....Edmonton, Alta.
1 Patterson, R. G......St. Marys.

7 Peart, J. D........Nelson, Ont.
1 Pennington, C. W......Dundas.
1 Perry, C. V...........Toronto.
5 Phillips, W. E........Toronto.
7 Philp, G. O.........Port Hope.
2 Powell, W. D.........Hatchley.
3 Purdy, A. K..........Toronto.
1 Pym, A. F......Detroit, Mich.
1 Raney, P. H..........Toronto.
1 Ratz, I. L.............Elmira.
1 Raymond, H.. .Edmonton, Alta.
1 Rice, R. H...........Toronto.
7 Richardson, S. M......Ingersoll.
7 Robertson, A. S.......Toronto.
4 Robertson, J. M.......Toronto.
2 Ross, J..............Toronto.
3 Ross, S. W...........Toronto.
7 Rothwell, H. D........Gilford.
1 Rowe, H. M.........Norwich.
7 Russell, W. E....Wauabushene.
1 Rutherford, F. S........Bolton.
4 Rutter, G. W........Birch Cliff.
7 Ryan, W. M......Owen Sound.
1 Saunders, W. L.......Goderich.
2 Scarborough, C. M. M.
Strathcona, Alta.
7 Scott, A. G......Smith's Falls.
3 Scott, J. G...........Toronto.
7 Servos, F. M.
Niagara-on-the-Lake.
2 Shepley, J. G...........Essex.
1 Sheppard, H. L.....Coldwater.
1 Sheppard, N. E. D......Ottawa.
1 Shupe, S.........Attercliff Sta.
6 Sime, A. W...........Toronto.
2 Simpson, B. N........Toronto.
1 Sinclair, C. E.........Meaford.
1 Sinclair, R. B....Kamloops, B.C.
1 Skaith, J. B..........Toronto.
4 Skinner, W. C.........Toronto.
1 Smith, H. M........Goderich.
2 Smyth, G............Merriton.
1 Somers, N. L.........Rockford.
7 Standing, R. O....Boston Mills.
1 Steven, R. A..........Toronto.
1 Stevens, P. L.........Toronto.
7 Stoneman, E. C. R....Toronto.
7 Storey, G. C...Wawanesa, Man.
1 Strome, I. R......Brandon, Man
2 Taylor, G. B.........Toronto.
2 Taylor, J. S...Whitehorse, Y. T.
3 Tennent, E. H.........London.
1 Tillson, L. B......Bracebridge.
2 Tilston, J. A..........Toronto.
1 Treloar, G. E.........Toronto.
7 Tull, W. S...........Edmonton.
6 Twidale, E. A..... Niagara Falls,
1 Van Dyke, F. T.......Grimsby.
3 Verity, M. F........Brantford.
1 Waddell, H. O.......Port Hope.
1 Wagner, H. W........Toronto.
1 Wallace, H. D. M......Toronto.
5 Walton, B..........Peterboro.
1 Waugh, J. K..........Whitby.
1 Whitley, P. L...........Gorrie.
6 Wigle, A. E.........Kingsville.
4 Wilson, A. C..........Toronto.
1 Wilson, H. P..........Toronto.
1 Wood, E. O.......Victoria, B.C.
1 Wood, G. A.........Peterboro.
2 Young, R. W............Essex.

Third Year.

1 Abendana, E. M.
Port Antonio, Jamaica.
7 Allen, R. J........Wallaceburg.
3 Anderson, A. S......Peterboro.
1 Avery, C. R..........Schreiber.
4 Baldwin, L. C. M......Toronto.
1 Beatty, F. W.........Pembroke.
1 Beatty, W. B...........Sarnia.
2 Bell, C. A............Toronto.
7 Bell, R. S.............Toronto.
2 Binns, R. E...........Toronto.
1 Black, B. S...........Toronto.
1 Blain, D.............Toronto.
5 Bonham, A. R........Toronto.
7 Bonter, E. R..........Trenton.
7 Brereton, L. R....Calgary, Alta.
4 Brown, B.............Toronto.
2 Buchanan, T. R.....Thessalon.
7 Buchanan, W. B....Vandeleur.
3 Burrows, B. H. A......Toronto.
2 Caldwell, W. B........Toronto.
1 Cameron, O. L..Winnipeg, Man.
1 Campbell, L. L.Saskatoon, Sask.
2 Carlyle, R. T..........Toronto.
3 Carmichael, R. M......Kenora.
1 Carrie, G. M......Owen Sound.
1 Christner, J. C........Innerkip.
2 Clark, H.......... ....Toronto.
1 Clark, W. G.......Owen Sound.
6 Clarkson, G. E........Toronto.
3 Clegg, B. D.........Peterboro.
7 Coleman, J. H.........Toronto.
1 Cook, G. M........St. Thomas.
1 Coombs, J. A............Blyth.
4 Coon, B. R............Toronto.

7 Corbould, C. E. B. New Westminster.
2 Curtis, W. T........Tillsonburg.
3 Davison, H. D. Bridgewater, N.S.
7 Deitch, E. L..........Toronto.
3 Delamere, R. D.......Toronto.
2 Diamond, R. W........Toronto.
5 Doncaster, L. W.......Toronto.
7 Duncan, W. G......Port Dover.
7 Ferguson, D. G.....St. Thomas.
1 Fiddes, F. R...........London.
1 Fleming, D. H. Pelee Island South.
3 Foote, F. F....Port Dalhousie.
1 Fowlds, E. S. Maple Creek, Sask.
2 Garnham, W. H........Cayuga.
1 German, A. M........Welland.
1 Goodman, H. M. Maple Creek, Sask.
1 Galbraith, J. S........Toronto.
1 Gray, A. G...........Toronto.
3 Gray, A. J.......Victoria, B.C.
1 Gray, E. R...............Eden.
7 Hadcock, J. P.........Toronto.
1 Hamilton, J. R,. Winnipeg, Man.
7 Harris, H. C........Kingsville.
1 Hawley, H. A... ......Toronto.
1 Hayman, A. W........London.
1 Hearn, R. L..........Toronto.
1 Heinonen, H. J........Toronto.
3 Henry, R. A............Barrie.
7 Hill, T. A..........Ninga, Man.
1 Holden, O............Toronto.
1 Howard, J. T..........Toronto
7 Howlett, T. F.........Howlett.
5 Huether, J. C..........Berlin.
1 Ireson, E. T..........Toronto.
1 Johnson, G. R.....Fernie, B.C.
1 Junkin, R. L...........Toronto.
7 Kelly, S. S...........Lambeth.
7 Kerr, A. E...........Hamilton.
7 Kilmer, C. E..........Toronto.
1 Laing, J. S.............Essex.
1 Lawless, N............Toronto.
7 Leslie, A.........Owen Sound.
4 Livingston, H. D....Brantford.
7 Lorimer, N. H.........Toronto.
7 Lytle, L. B.............Tralee.
7 MacKenzie, H. A. Hyde Park, Ont.
1 MacKenzie, H. R. Scotsburn, N.S.
6 Maclachlan, K. S......Toronto.
1 MacPherson, A. R....Petrolia.
3 MacQuarrie, A. H.....Valetta.
1 MacTavish, W. H....Van Camp.
1 McCarthy, T. V......Pembroke.
4 McConnell, R. S.....Walkerton.
2 McDougall, A. C......Ottawa.
1 McFaul, W. L.....Owen Sound.
1 McGill, S. B...........Toronto.
1 McKenzie, R. J..Niagara Falls.
3 McQueen, P. H. M.....Chesley.
1 Mickleborough, K. F. Regina, Sask.
7 Mickler, G. J..........Preston.
1 Millman, N. C........Toronto.
1 Moore, T. R.... .....Toronto.
1 Mulqueen, F. J. Sao Paulo, Brazil.
1 Murdie, W. C.......Winthrop.
2 Mutch, D. A. S........Toronto.
2 Newton, K. L....Hartney, Man.
5 Otto, C. J............Toronto.
1 Parkinson. N, F.......Toronto.
7 Peart, J. W.........St. Thomas.
1 Perron, E..Metabetchouan, Que.
1 Phillips, J. J......Whittington.
2 Pickard, R. T...Winnipeg, Man.
1 Quail, H. C.....Winnipeg, Man.
7 Ratz, E. G.............Elmira.
6 Relyea, P. J..........Cornwall.
1 Riddell, J. M..........Toronto.
1 Ritchie, J. E..........Berkeley.
1 Robertson, C.S........Mohawk.
7 Rous, C. C...........Toronto.
7 Russell, C. H.....Waubaushene.
7 Scarlett, A. A.........Toronto.
1 Sewell, L.........Cedar Grove.
7 Sharp, M. C..........Toronto.
3 Shaw, K. E........Wallaceburg.
3 Sims, F. R.......New Durham.
2 Sinclair, D. G...........Sarnia.
4 Soper, R. W...........Toronto.
1 Spellman, W. A......Hastings.
7 Strathy, J. M.....Port Arthur.
1 Sutherland, D.........Toronto.
1 Tasker, R............Toronto.
1 Thompson, J. M..Mount Healy.
2 Thompson, W. K......Toronto.
7 Thomson, D. J....Owen Sound.
7 Torrance, T. E............Galt.
2 Trow, R. M.........Stratford.
1 Ure, W. G.........Woodstock.
1 von Gunter, C. F......Blenheim.
3 Watts, R. E.........Brantford.
3 Webster, C. A.........Toronto.
4 Webster, H...........Toronto.
1 Weir, D. H..Prince Albert, Sask.
7 Whately, H. E......Thornbury.
7 Wigle, J. A. H.......Kingsville.
1 Winters, W. S.........Toronto.
1 Wood, R. F. B........Toronto.
7 Wright, A. J..Washington, Ont.
7 Young, R. B....Ft. Steele, B.C.

Fourth Year.

1 Allan, L. B...........Toronto.
5 Aitken, J...........Brantford.
3' Archer, E. G.........Petrolia.
1 Badgley, L. A........Canfield.
1 Baird, W. J..........Scarboro.
1 Bartley, T. H.........Toronto.
3 Billings, J. H.........Leskard.
2 Bissett, J. R........Kincardine.
3' Boswell, W. O.........Toronto.
1 Boulton, W. J....Wallaceburg.
3' Brackinreid, T. W.....Toronto.
1 Brouse, W. H. D......Toronto.
3' Brown, H......Calgary, Alta.
1 Bruce, W. J. ......Gamebridge.
1 Burnham, G. N. H.....Toronto.
3' Cale, W. C...........Toronto.
6 Chadwick, W. W....Hamilton.
1 Chandler, R. B......Stratford.
1 Cherry, P. G.........Toronto.
3' Chesnut, E. F...Pittsburg, Pa.
1 Chesnut, V. S.Vancouver, B.C.
1 Clark, H. J.........Winnipeg.
3' Cole, C. R.........Woodstock.
2 Cole, D. B............Toronto.
3' Cook, A. S..........Ingersoll.
4 Craig, J. H............Toronto.
3 Cruthers, W. M.......Oakville.
1 Cunningham, C. H..Hamilton.
3' D'Alton, F. K........Weston.
1 Davis, W. B.Maple Creek, Sask.
3' De Guerre, F. C.......Toronto.
1 Dunbar, W. B......Dunbarton.
3 Duncan, J. M.........Toronto.
5 Eckert, C. H..........London.
3 Elliot, J. A...........Toronto.
1 Elliott, C. F...........Toronto
1 Elliott, G. R.........Goderich.
3' Evans, W. J..........Jermyn.
1 Ewing, E. O..........Toronto.
1 Farrell, K. A...... ...Toronto.
1 Flook, S. E........Willowdale.
5 Frankel, E. L.........Toronto.
2 Freeland, E. E........Toronto.
1 Freeman, J. R........Brighton.
3 Fuller, R. J..........Watford.
1 Gibson, J. M....Edmonds, B.C.
5 Gooderham, J. L......Toronto.
1 Goodridge, H.Edmonton, Alta.
3' Graham, E. B.......Brampton.
3 Green, R. E..........Toronto.
3' Greene, E. A..........Toronto.
1 Hamilton, G. M.New Hamburg.
2 Heebner, M. B.Vancouver, B.C.
3' Hickling, F. G....Dawson, Y.T.
3' Hill, H. R............Toronto.
1 Hoover, O. H.......Port Perry.
1 Huff, A. J....Edmonton, Alta.
1 Hyatt, H.............Toronto.
1 Jarvis, R. H......Regina, Sask.
2 King, J. T..........Cooksville.
3' Kirkwood, M.........Toronto.
5 Kirwan, P. T.........Ottawa.
2 Lanning, J.
Leading Tickles, Nfld.
2 Lieberman, M........Toronto.
6 Long, A. L......Brooklyn, N.Y.
1 Lowrie, A. W. P..Calgary, Alta.
3' MacAndrew, W. M....Renfrew.
3' Macaulay, R. V.......Toronto.
1 MacBeth, R. E........Toronto.
2 MacDonald, A. D.......Cobalt.
1 Macdonald, F. M......Toronto.
1 MacGregor, A. E.
Niagara-on-the-Lake.
1 MacKay, E. G......Hamilton.
1 MacLaurin, J. G.Vankleek Hill.
1 MacLennan, G. G.
1 McAndrew, J. B..St. Catharines.
1 McElhanney, T. A,
Vancouver, B.C.
3' McElroy, R. W.......Toronto.
3' McEwen, H. J......Brantford.
1 McFayden, A. J......Bolsover.
3 McGhie, W. G .. St. Catharines.
3 McIntosh, W. G......Seaforth.
1 McKechnie, F. H...Woodstock.
3' McKenzie, D. A.Wawanesa, Man.
2 McLaren, A. J........Ottawa.
1 McLellan, R.A..Edmonton, Alta.
2 McPherson, W. B.....Toronto.
3' McQueen, A. A.......Toronto.
4 Madill, H. H.........Toronto.
3 Malone, J. E..........Brechin.
1 Marr, N.............London.
3' Martin. J. C........Ponsonby.
1 Meader, C. H.........Toronto.
1 Mills, L. G...........Toronto.
3' Morgan, J. P..........Toronto
2 Morphy, J. A..........Oshawa
1 Murphy, M. H........Toronto.
3' Nash, J. C............London.
3 Niebel, E. H..........Norwood.
3' Nixon, C. K..........Toronto.
3' Noble, E. S...........Toronto.
1 Northey, R. K........Toronto.
3' O'Donnell, V. J....Merrickville.
2 O'Flynn, W. A........Toronto.
2 Orr, J. A...........Clarkson's.
3' Parker, J. S....Sault Ste. Marie.
3 Parkin, J. H..........Toronto.
1 Patton, J. M......Regina, Sask.
3' Perrin, W. J........Wroxeter.
1 Pick, B. W........Glen Meyer.
1 Pratt, F. M..........Ottawa.

4	Pullan, H.	Toronto.
1	Quinlan, L. J.	Edmonton, Alta.
1	Ratz, J. E.	Elmira.
1	Read, F. N.	Kerrobert, Sask.
4	Reid, E. V.	Toronto.
1	Richardson, W. A.	Victoria, B.C.
1	Robinson, W. E.	Beathton.
5	Rogers, L. J.	Oshawa.
3′	Ross, D.	London.
1	Ross, O. W.	Brantford.
3	Rutley, F. G.	Toronto.
1	Scandrett, F. R.	Belgrave.
5	Scott, J. W.	Toronto.
5	Scott, (Miss) H. E.	Forest.
3′	Seaton, N. D.	Springville.
	Segre, B. H.	Savanna la Mar, B.W.I.
1	Seibert, F. V.	Southampton.
5	Shaw, M. R.	Forest.
3	Shaw, W. C.	Toronto.
4	Sheard, P.	Toronto.
2	Sills, C. P.	Seaforth.
3′	Smith, M. L.	New Westminster, B.C.
1	Smith, W. C.	Toronto.
1	Sneath, R. G.	Toronto.
2	Spry, R. J.	London.
3′	Squire, G. E.	Atwater, Sask.
3′	Steele, W. S.	Toronto.
5	Stewart, A. E.	Toronto.
3	Stewart, R.	Welland.
3′	Story, R. A.	Vancouver, B.C.
3	Taylor, R.	Toronto.
1	Temple, J. B.	Toronto.
3′	Ternan, E. A.	Arthur.
1	Torrance, R. D.	Guelph.
1	Tough, W. G.	Toronto.
2	Waite, J. H. C.	Port Hope.
1	Walcott, W. D.	Savanna-la-mar, B.W.I.
1	Walker, R. M.	Caron, Sask.
3	Wallace, G. L.	Toronto.
1	Wardell, A.	Beaverton.
1	Watson, F. E.	Toronto.
3′	Waugh, B. W.	Berlin.
3	Welford, P. G.	Toronto.
2	Wheler, A. G.	Edgewood Park, Pa.
1	Whitside, J. L.	Delhi.
3	Wilkes, G. H.	Winnipeg.
5	Williams, E. R.	Toronto.
1	Wilson, W. H.	Merriton.
1	Worden, W. G.	St. Thomas.
1	Wright, W. J. T.	Toronto.
1	Wrong, F. H.	Windsor.
2	Wylie, W. H.	St. Catharines.
3	Young, A.	Binbrook.
1	Young, S.	Owen Sound.

Arts Students taking instruction in Assaying, Surveying, etc.

Elsworth, H. V.	Ridgeway.
Hazen, A. C.	Walsingham Centre.
Robertson, F. B.	Hagersville.
Shives, A. K.	Campbellton, N.B.
Todd, E. W.	Randolph.

Summary.

First Year Students	265
Second Year Students	218
Third Year Students	145
Fourth Year Students	165
Arts Students	5
	798

PRIZEMEN.

Engineering.

1879.	I. Year	J. McAree	1st Prize
1880.	II. "	J. L. Morris	1st "
1881.	I. "	G. H. Duggan	1st "
	II. "	D. Jeffrey	1st "
1882.	I. "	A. R. Raymer	1st "
	I. "	E. W. Stern	2nd "
	II. "	G. H. Duggan	1st "
	III. "	D. Jeffrey	1st "
1883.	I. "	B. A. Ludgate	1st "
	I. "	A. M. Bowman	2nd "
	II. "	A. R. Raymer	1st "
	II. "	E. W. Stern	2nd "
	III. "	G. H. Duggan	1st "
1884.	II. "	B. A. Ludgate	1st "
	III. "	E. W. Stern	1st "
	III. "	A. R. Raymer	2nd "
1885.	I. "	A. E. Lott	1st "
	I. "	J. Rogers	2nd "
	II. "	T. K. Thomson	1st "
	III. "	B. A. Ludgate	1st "
1886.	I. "	C. H. C. Wright	1st "
	I. "	J. E. Ross	2nd "
	II. "	A. E. Lott	1st "
1887.	I. "	H. E. T. Haultain	1st "
	II. "	C. H. C. Wright	1st "
	III. "	A. E. Lott	1st "
	III. "	J. Rogers	2nd "
1888.	I. "	E. B. Merrill	1st "
	I. "	F. M. Bowman	2nd "
	II. "	D. D. James	1st "
	III. "	C. H. C. Wright	1st "
1889.	I. "	J. K. Robinson	1st "
	I. "	G. E. Silvester	2nd "
	II. "	E. B. Merrill	1st "
	II. "	F. M. Bowman	2nd "
	III. "	D. D. James	1st "
1890.	I. "	C. Fairchild	1st "
	II. "	E. B. Merrill	1st "
	III. "	J. K. Robinson	1st "
	III. "	F. M. Bowman	2nd "
1891.	I. Year	A. J. McPherson	1st Prize
	I. "	R. B. Watson	2nd "
	II. "	J. B. Goodwin	1st "
	III. "	G. E. Silvester	1st "
	III. "	C. W. Dill	2nd "
1892.	I. "	A. E. Bergey	1st "
	I. "	R. W. Angus	2nd "
	II. "	A. J. McPherson	1st "
	II. "	R. B. Watson	2nd "
	III. "	E. J. Laschinger	1st "
	III. "	C. Fairchild	2nd "

The Grant of prizes was withdrawn at the close of 1892.

Architecture.

The prize in Architecture was the gift of Mr. D. B. Dick; Architect, Toronto.

1891.	I. Year	H. F. Ballantyne.
1892.	I .Year	J. A. Ewart.
1893.	I. Year	A. H. Harkness.
1894.	I. Year	E. A. Forward.
1895.	I. Year	W. F. Scott.
1896.	I. Year	D. Macintosh.
1889.	I. Year	W. F. Shepherd.

Civil Engineering.

Prizes are awarded for general proficiency in the subjects of the Third Year.

Date.	Name.	Donor.
1897.	M. B. Weekes	T. Kennard Thomson, C.E.
1898.	J. A. Stewart	"
1899.	T. Shanks	"
1900.	E. H. Phillips	"
1901.	H. P. Rust	"
1902.	W. F. Ratz	"
1903.	C. R. Young	"
1904.	W. N. Moorhouse	"
1905.	W. Barber	"
1905.	N. L. Crosby	Noel Marshall, Esq.
1906.	W. P. Near, B.A	T. Kennard Thomson, C.E.
1906.	W. A. M. Cook	Noel Marshall, Esq.
1907.	M. K. McQuarrie	T. Kennard Thomson, C.E.
1907.	T. H. Hogg	Noel Marshall, Esq.
1908.	M. Pequegnat	T. Kennard Thomson, C.E.
1909.	E. S. Martindale	"
1910.	W. H. Wilson	"
1911.	F. M. Pratt	"

Mining Engineering.

1905.	G. S. Scott	Hon. W. H. Montague, M.D.
1905.	W. A. Begg	"
1906.	J. A. McKenzie	"
1906.	W. Huber	"
1907.	B. Neilly	"

Mechanical Engineering.

1905.	W. G. Nicklin	Standard Silver Co.
1906.	D. W. Marrs	" " "
1907.	H. O. Hill	" " "

HEAD.

Electrical Engineering.

1905.	C. E. Sisson	Noel Marshall, Esq.
1906.	A. H. Hull	" " "
1907.	F. R. Ewart	" " "

Mechanical and Electrical Engineering.

1897. A. T. Gray	F. A. Riehle, Esq.
1898. F. C. Smallpiece	"
1905. C. B. Aylesworth	Standard Silver Co.
1906. E. M. Wood	" " "
1907. H. Raine	" " "

Architecture.

1906. A. W. McConnell	Hon. W. H. Montague. M.D.
1907. G. N. Molesworth	"

Analytical and Applied Chemistry.

1906. C. C. Forward	Standard Silver Co.
1907. P. F. Morley	" " "

Degree of Bachelor of Applied Science.

1911. Adams, J. H.
1909. Akers, H. G.
1908.*Allen, F. G.
1893. Alison, T. H.
1911. Amsden, W. G.
1909.*Amos, W. L.
1908. Anderson, F. J.
1910.*Anderson, R. M.
1897.*Angus, R. W.
1904.*Angus, H. H.
1901. Ardagh, E. G. R.
1911. Arens, R. J.
1907. Armer, J. C.
1896. Armstrong, J.
1911.*Austin, E. T.
1897.*Bain, J. W.
1911. Baird, J. A.
1907. Baker, M. H.
1894.*Ballantyne, H. F.
1907.*Banting, E. W.
1911. Barber, H. C.
1911. Barber, T.
1906. *Barber, W.
1901. Barley, J. H.
1911. Barnett, H. A.
1910. Barry, W. H.
1910. Bartlett, E.
1907. Bates, M.
1910.*Bennett, G. A.
1910. Beckstedt, R. D. S.
1907.*Betts, H. H.
1902. Barrett, R. H.
1895. Beauregard, A. T.
1906. Begg, W. A.
1908.*Beynon, D. E.

1911. Bissett, D. G.
1910. Birchard, E. R.
1910. Black, W. D.
1910.*Black, G. E.
1910.*Blackwood, W. C.
1911. Blizard, D. C.
1910. Bowers, G. H.
1903. Blair, W. J.
1905. Bonnell, M. B.
1902.*Boswell, M. C.
1910. Bowen, G. H.
1911.*Bowman, E.P.
1908. Bowman, H. D.
1899. Boyd, W. H.
1909. Brady, W. S.
1902. Brandon, E. T.
1907. Brandon, H. E.
1909. Brechen, P. R.
1903. Brereton, W. P.
1907. Brian, M. E.
1911.*Brock, A. F.
1896. Brodie, W. M.
1910. Brown, C. E.
1909. Brown, J. A.
1906. Brown, T. D.
1910. Brown, T. W.
1910. Browne, E. W.
1909. Buchan, P. H.
1895. Bucke, W. A.
1911.*Burgess, J. R.
1910. Burns, J.
1909. Bush, C. E.
1907. Bunnell, A. E. K.
1906. Burnham, F. W.
1900. Burnside, J. T. M.

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*Degree with honours.

1905. Burwash, N. A.
1910. Cameron, M. G.
1905. Calder, J. W.
1911.*Campbell, A. D.
1909. Campbell, A. W.
1905. Campbell, A. J.
1905. Campbell, A. M.
1910. Campbell, J. E.
1911. Carlyle, W. M.
1898. Carpenter, H. S.
1909. Carscallen, H. R.
1899. Carter, W. E. H.
1903.*Chace, W. G.
1903.*Chadsey, S. B.
1898. Charlton, H. W.
1909. Chesnut, F. H.
1911. Chesnut, A. W.
1894.*Chewett, H. J.
1911. Chisholm, D. C.
1903.*Christie, W.
1905. Christie, U. W.
1911. Clark, H. S.
1911.*Cline, C. G.
1906. Coates, P. C.
1911. Cockburn, L. S.
1905.*Code, T. F.
1910.*Coltham, G. W.
1900.*Chubbuck, L. B.
1902. Cockburn, J. R.
1911. Code, A. G.
1909. Collett, W. C.
1910.*Cooch, H. A.
1910. Collinson, J. G.
1911. Colquhoun, G. A.
1907.*Cook, W. A. M.
1909. Cory, R. Y.
1900. Coulthard, R. W.
1907. Cousins, E. L.
1909. Cowper, G. C.
1909.*Coyne, H.
1901. Craig, J. A.
1911.*Craig, S. E.
1905. Crerar, S. R.
1906.*Crosby, N. L.
1911.*Crosby, T. H.
1909. Culbert. J. V.
1903.*Culbert, M. T.
1910.*Cummings, J. D.
1909.*Dahl, A. D.
1910.*Dallyn, F. A.
1907. Daniels, W. N.
1910.*Davis, A. I.
1909. Davis, R. S.
1901. Davison, J. E.
1905. Davison, A. E.
1911.*Dean, C. D.
1907.*Death, N. P. F.
1902. DeCew, J. A.
1910. Delahaye, W. H.
1910. Derham, W. P.
1901. Dickson, G. W.
1901.*Dixon, H. A.
1911. Dobbin, R. L.
1896. Dobie, J. S.
1911.*Dobson, W. P.
1910.*Dodds, W. A.
1907. Dundass, C. S.
1909.*Dyer, F. C.
1902.*Eason, D. E.
1909. Edwards, C.
1904. Edwards, W. M.
1897.*Elliott, H. P.
1911.*Emery, V. H.
1903. Empey, J. M.
1910. Evans, S. L.
1908. Evans, S. D.
1895.*Ewart, J. A.
1908.*Ewart, F. R.
1910. Falconer, F. S.
1910. Fargey, T. A.
1904. Fensom, C. J.
1911.*Ferguson, C. R.
1906. Ferguson, G. H.
1911. Ferguson, J. W.
1910. Fergusson, A. T.
1906.*Fierheller, H. S.
1911. Fisken, J. B. K.
1910. Flanagan, O. L.
1911.*Fletcher, A. W.
1911. Fletcher, F. T.
1910. Flint, C.
1905. *Ford, A. L.
1901. Foreman, W. E.
1911. Foreman, J. M.
1909. Foster, A. H.
1911. Foulds, W. C.
1911. Fraser, A.
1910. Freeman, T. E.
1910. Frost, E. R.
1908. Fux, P. C.
1904.*Gaby, F.A
1903.*Gagne, S.
1911. Gall, H.
1911. Galletly, J. S.
1908.*Galt, G.
1904. Gardner, J. C.
1908.*Garrow, A. B.
1903.*Gibson, A. E.
1911. Gibson, M. M.
1904.*Gibson, N. R.

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*Degree with honours.

1904. Gibson, W. S.
1904.*Gillespie, P.
1909. Gillies, A.
1911. Glover, A. E.
1911. Goad, V. A. E.
1894. Goodwin, J. B.
1911. Gourlay, V. F.
1910. Graham, D. A.
1908.*Graham, C. W.
1899. Grant, W. F.
1908. Grasett, C. S.
1910. Grassie, C. A.
1898. Gray, A. T.
1911. Gray, J. E.
1905. Gray, W. W.
1910. Greene, G. E. D.
1909. Greene, P. W.
1911. Greene, R. L.
1905. Greenwood, W. K.
1907. Guest, W. S.
1909.*Gu ley, C. L.
1910. Gunn, W. W.
1910. Guy, E.
1909. Hackner, J. W.
1908.*Hagarty, R. E. W.
1897.*Haight, H. V.
1909. Hall, K.
1904. Hamilton, J. F.
1907. Hamilton, C. B.
1909. Hamilton, C. T.
1905. Hanes, G. S.
1900. Hare, W. A.
1897.*Harkness, A. H.
1908.*Harkness, A. L.
1906. Harris, C. J.
1911.*Harris, J. H.
1908. Harrison, E.
1907. Hartney, J. C.
1902. Harvey, C.
1910. Harvey, D. W.
1911.*Harvie, N. J.
1901. Hemphill, W.
1909. Hendry, M. C.
1895. Herald, W. H.
1906.*Heron, J. B.
1907. Hett, S.
1906. Hewson, W. G.
1908.*Hill, H. O.
1908.*Hogg, T. H.
1901. Holcroft, H. S.
1910. Holmes, A. E.
1911. Holmes, C. R.
1908. Hookway, C. W.
1907. Hopkins, C. H.
1911.*Hopkins, P. E.
1910. Hoshal, G. C.
1909.*Huether, D. J.
1909. Huether, A. D.
1910. Hughes, C.
1908.*Hull, A. H.
1896. Hull, H. S.
1910. Hunter, A. E.
1909. Hunter, A. N.
1908.*Hutton, C. H.
1908. Hyland, H. M.
1908. Hyman, E. W.
1908.*Ireland, L. G.
1910. Irwin, H.
1910. Isbister, J.
1910. Jackes, F. P.
1909. Jackson, W.
1894. James, D. D.
1905. James, E. A.
1910. James, E. W.
1911. James, F. L.
1893. James, O. S.
1905. Jermyn, P. V.
1905.*Job, H. E.
1895. Johnson, S. M.
1902. Johnson, J. A.
1896. Johnson, A. C.
1910. Johnson, C. C.
1907. Johnston, C.
1910. Johnston, J. T.
1911. Johnston, C. E.
1911. Johnston, R. H.
1907. Jones, G. R.
1907. Jones, T.
1907. Jupp, A. E.
1908. Kay, E. W.
1894.*Keele, J.
1911.*Keith, J. C.
1910. Kemp, J. B. O.
1911. Kennedy, H. G.
1909. Keppy, J. D.
1910. Key, W. R.
1908. Kinghorn, A. A.
1911. Kingstone, G. A.
1911. Kirwan, G. L.
1910. Klotz, H. N.
1903. Knight, R. H.
1911. Knight, S.
1899. Kormann, J. S.
1894. Laidlaw, J. T.
1893. Laing, A. T.
1909. Lamb, F. C.
1910. Lamont, A. W.
1906. Lancaster, H. M.

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*Degree with honours.

1907. Lang, J. L.
1910.*Langmuir, C. B.
1903. Langmuir, F. L.
1893.*Laschinger, E. J.
1901. Latham, R.
1906. Latornell, A.
1906. Latornell, A. J.
1893.*Lawson, W.
1893. Lea, W. A.
1911. Leaver, C. B.
1911. Lee, R. G.
1911. Leitch, J. N.
1910.*Lennox, A. E.
1908. LePan, A. D.
1909.*Leslie, J. N. M.
1908. Linton., A.P
1906.*Loudon, T. R.
1907. MacKenzie, K. A.
1894. McAllister, A. L.
1895. McAllister, J. E.
1911. McAlpine, D. D.
1893. McAree, J.
1910. McArthur, A. S.
1905. McAuslan, H. J.
1904. McBride, A. H.
1911. McBride, T. C.
1910. McCollum, C. R.
1907.*McConnell, A. W.
1911. McCordick, A. S.
1905. McCuaig, O. B.
1910. McCuaig, P. J.
1911. McDougall, S. G.
1893. McEntee, B.
1905. McEwen, G. G.
1904. McFarlane, J. A.
1906. McFarlane, W. G.
1908.*McFarlane, J. B.
1905. *McGibbon, C. P.
1896.*McGowan, J.
1908.*McGugan, D. J.
1905. McKay, C. D.
1896.*McKinnon, H. L.
1909. McLean, L. A.
1903. McMaster, A. T. C.
1901. McMillan, J. G.
1910. McMillan, V.
1909. McMordie, H. C.
1908. McNeill, F. W.
1911.*McNiven, J.
1894.*McPherson, A. J.
1909.*McRoberts, A. A.
1911. McSloy, J. I.
1895. McTaggert, A. L.
1902.*McVean, H. G.
1897. MaCallum, A. F.
1897. Macbeth, C. W.
1911. Macdonald, G. A.
1911. Macdonald, J. A.
1911. Macdonald, J. B.
1910. Macfarlane, E. D.
1904. Macintosh, D.
1911. MacKinnon, J. A.
1907.*Maclachlan, W.
1910. Maclean, B. A.
1911. MacLeod, D. D.
1911. MacMurchy, H. G.
1910. Macpherson, N. W.
1911.*MacTavish, H. J.
1908. Malcolmson, W. S.
1910. Manning, N. H.
1910. Manson, A. B.
1905. Marriott, F. G.
1909. Marshall, R. J.
1897. Martin, T.
1911. Martin, W. H.
1911.*Martindale, E. S.
1911. Martyn, O. W.
1908. Mason, D. H. C.
1903.*Matheson, P.
1911. Matthews, A. C.
1908. Melson, J. W.
1907.*Menzies, J. M.
1894.*Merrill, E. B.
1911. Merriman, H. O.
1908. Miller, L. R.
1911. Milligan, F. S.
1911. Milligan, G. L.
1908. Mills, G. G.
1911. Mills, P. E.
1893. Milne, C. G.
1896. Mines, W. H.
1909. Minns, J. B.
1895.*Minty, W.
1894. Mitchell, C. H.
1907. Mitchell, B. F.
1906. Moffatt, R. W.
1900. Monds, W
1909. Monk, E. D.
1905.*Montgomery, R. H.
1909.*Moody, F. H.
1908. Moore, J. M.
1909. Morice, J. H.
1910. Morris, C. A.
1911. Mortimer, F. R.
1910. Morton, G.
1909. Mowbray, F. E. H.
1911. Munro, A. H.
1906. Munro, G. R.
1910. Munro, F. V.
1909. Murdock, C. R.

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*Degree with honours.

1910. Murphy, C. J.
1909.*Murray, W. P.
1909. Murray, E. W.
1907.*Near, W. P.
1901. Neelands, E. V.
1908. Neelands, E. W.
1908. Neelands, R. E. K.
1908. Neilly, B.
1911.*Neville, E. A.
1904. Nevitt, I. H.
1911.*Newhall, V. A.
1910. Newton, J.
1911.*Newton, W. E.
1911. Nichol, F. T.
1907. Nicklin, W. G.
1908. Nourse, A. E.
1910. O'Hearn, J. J.
1904. Oliver, E. W.
1911. O'Neil, C. M.
1904. Pace, J. D.
1905. Pace, G.
1911. Palmer, C. E.
1906.*Pardoe, W. S.
1907. Park, D. G.
1905. Parke, J.
1911. Parker, G. C.
1904. Patten, B. B.
1911. Pearce, K. K.
1909. Peckover, H. J.
1909.*Pequegnat, M.
1910.*Petry, A. M.
1906. Phillips, E. P. A.
1911. Phillips, C. H.
1911. Pivnick, M.
1904. Plunkett, T. H.
1901. Pope, A. S. H.
1907. Porte, W. B.
1910. Porter, C. J.
1911. Potter, R. B.
1903.*Powell, G. G.
1902.*Price, H. W.
1909. Prochnow, F. E.
1909. Proctor, E. M.
1909. Publow, C. F.
1907. Purser, R. C.
1908. Quance, G. E.
1906. Ramsey, G. L.
1911. Ramsay, W. S.
1909.*Rannie, J. L.
1909.*Ransom, J. T.
1905. Raymond, D. C.
1910.*Redfern, C. R.
1909.*Redfern, W. B.
1906. Reid, F. B.
1900.*Revell, G. E.
1900. Richards, E.
1910. Richardson, F. L.
1908. Richardson, C. W. B.
1911. Richardson, C. E.
1910. Ricker, H. A.
1906.*Riddell, M. R.
1901. Roaf, J. R.
1903. Robertson, H. D.
1907. Robertson, N. R.
1909. Robertson, A. R.
1898.*Robinson, A. H. A.
1908. Roddick, J. O.
1907. Rogers, C. H.
1907. Rolfson, O.
1909.*Rose, R. R.
1907. Ross, R. C.
1907.*Rothwell, T. E.
1905. Roxborough, G. S.
1905. Rutherford, F. N.
1910. Rutledge, L. T.
1902. Rust, H. P.
1910. Sanderson, A. U.
1911.*Sara, R. A.
1902. Sauer, M. V.
1901. Saunders, H. W.
1905.*Scheibe, H. M.
1911. Schlarbaum, A.
1910. Schwenger, C. E.
1908.*Scott, W. A.
1900.*Shanks, T.
1909. Shaw, W. E. V.
1909. Shearer, H. F.
1905. Sheply, J. D.
1895. Shields, J. D.
1899. Shipley, A. E.
1906. Shirriff, C. H.
1903. Sinclair, D.
1906. Slater, F. W.
1902.*Smallpiece, F. C.
1898. Smiley, R. W.
1908.*Smith, D. A.
1904. Smith, H. G.
1905. Smither, W. J.
1908. Smithrim, E. R.
1911. Sparling, M. W.
1894.*Speller, F. N.
1908.*Spencer, A. C.
1894. Squire, R. H.
1909. Stamford, W. L.
1909. Starr, R. H.
1910. Stayner, D. S.
1911.*Steele, A. L.
1911. Steven, H. M.
1902. Stevenson, W. H.
1908. Stewart, L. D. N.

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*Degree with honours.

1909.*Stewart, R. B.
1909.*Stewart, W. M.
1911.*Stewart, N. C.
1908.*Stiles, J. A.
1909.*Stiver, J. L.
1911. Street, J. C.
1910. Stroud, S.
1909. Stuart, H. B.
1910. Stuart, J. L. G.
1898.*Stull, W. W.
1909. Summers, G. F.
1911. Sutherland, A. L.
1911. Sutherland, C. C.
1903. Sutherland, W. H.
1910. Swan, R. G.
1906. Swan, W. G.
1911.*Sword A. D.
1910.*Tate, H. W.
1910.*Taylor, W. E.
1910. Taylor, J. W. R.
1903. Teasdale, C. M.
1900.*Tennant, D. C.
1901. Tennant, W. C.
1909. Thomas, V. C.
1908. Thompson, P. M.
1911. Thompson, R. M. A.
1893. Thomson, R. W.
1905. Thomson, S. E.
1906. Thomson, L. R.
1907. Thomson, J. E.
1908. Thomson, O. R.
1901. Thorne, S. M.
1909. Thornley, J. H.
1901. Thorold, F. W.
1908. Tillson, E. D.
1910. Tipper, G. A.
1910. Toms, C. G.
1905. Townsend, C. J.
1905.*Townsend, D. T.
1906. Traill, J. J.
1904. Trees, S. L.
1910.*Trees, A. G.
1896. Tremaine, R. C. C.
1905. Trimble, A. V.
1905. Tucker, B. B.
1910. Turnbull, W. G.
1906.*Turner, W. E.
1911. VanAllen, K. M.
1911.*Van Norman, C. P.
1910. Vatcher, A.
1911. Venney, L. T.
1900. Wagner, W. E.
1906. Wagner, H. L.
1911. Walker, C. M.
1905.*Walker, E. W.
1910. Walker, J. A.
1911. Walton, T.
1911. Warrington, G. A
1906. Watson, J. P.
1911. Watson, M. B.
1910. Webb, C. E.
1909. Wedlake, R. M.
1898. Weekes, M. B.
1901. Weir, H. M.
1906.*Wells, A. F.
1910.*West, A. M.
1911. White, F. C.
1909. White, W. J.
1911. Wickens, W. S.
1908.*Wilkes, E. D.
1905.*Williams, C. G.
1911.*Williams, G. K.
1899.*Williamson, D. A.
1910.*Williams, J. A. McK.
1910. Williamson, O. T. G.
1911. Wilson, F. F.
1911.*Wilson, L. R.
1904.*Wilson, N. D.
1908.*Wilson, J. N.
1908. Wilson, A. F.
1909.*Wilson, F. D.
1908.*Wood, E. M.
1911. Woods, M. H.
1911. Wookey, S. A.
1905. Worthington, W. R.
1893.*Wright, C. H. C.
1911. Wright, L. A.
1902. Wright, R. T.
1905. Wright, W. F.
1911.*Youell, A. W.
1905.*Young, C. R.
1907. Young, W. H.
1911. Young, W. S.
1903. Zahn, H.
1909.*Zimmer, A. R.

Degree of Civil Engineer (C.E.)

1898. Alison, T. H.
1889. Ashbridge, W. T.
1895. Bowman, A. M.
1893. Bowman, F. M.
1892. Chewett, H. J.
1900. Connor, A. W.
1901. Francis, Walter J.
1900. Haultain, H. E. T.
1893. Innes, W. L.
1886. Kennedy, J. H.
1908. Maccallum, A. F.
1885. Morris, J. L.
1896. Moore, J. E. A
1898. Mitchell, C. H.
1901. McDowall, R.
1895. McAllister, J. E.
1909. Oliver, E. W
1911. Swan, W. G.
1889. Tyrrell, J. W.
1894. Tyrrell, H. G.
1892. Thomson, T. K.

Degree of Mining Engineer (M.E.)

1897. Bucke, M. A.
1900. Laidlaw, J. T.
1909. Thomson, R. W.
1910. McMillan, J. G

Degree of Mechanical Engineer (M.E.)

1908. Fensom, C. J.
1901. Johnston, A. C.
1905. Laschinger, E. J.
1900. White, A. V.

Degree of Electrical Engineer (E.E.)

1896. Ross, R. A.
1903. Chubbuck, L. B.
1902. Elliott, H. P.
1905. Hemphill, W.

GRADUATES.

Graduates are requested to inform the Secretary of changes in their addresses.

1881.

1. J. L. MORRIS, C.E., O.L.S., Pembroke, Ont.
   Morris and Moore Land Surveyors and Architects.

1882.

1. D. Jeffrey, Windsor, Missouri
   Contractor.
1. J. H. Kennedy, C.E., O.L.S., Vancouver, B.C.
   Chief Engineer, Great Northern Ry.
1. J. MCAREE, B.A.Sc., D.T.S. (deceased.)

1883.

1. D. Burns, O.L.S., A.M. Can. Soc. C.E., Pittsburgh, Pa.
   Instructor in Mathematics and Plan Drawing, Carnegie Technical Schools.
1. G. H. DUGGAN, M. Can. Soc. C.E., Lachine, Que.
   Vice-President and Chief Engineer, Dominion Bridge Co., Ltd.
1. J. W. TYRRELL, C.E., D.L.S., Hamilton, Ont.
   Tyrrell & MacKay, Consulting Engineers and Surveyors.

1884.

1. W. C. KIRKLAND, New Orleans, La.
   Principal Assistant Engineer, Drainage, Sewage and Water Board of New Orleans.
1. J. MCDOUGALL, B.A. (deceased.)
1. A. R. Raymer, Pittsburgh, Pa.
   Assistant Chief Engineer, P. & L. E. Ry.
1. JAMES ROBERTSON, O.L.S., Toronto, Ont.
   Commissioner, The Canada Co.
1. E. W. STERN, M. Am. Soc. C.E., Park Ave. & 41st St., New York.
   Consulting Engineer.

1885.

1. J. F. BLEAKLEY, Bowmanville, Ont.
   Civil Engineer.
1. H. J. BOWMAN, D. & O.L.S., M. Can. Soc. C.E., Berlin, Ont.
   Bowman & Connor.
1. E. E. HENDERSON, O.L.S., Henderson P.O., Me.
   Civil Engineer.
1. B. A. LUDGATE, O.L.S., Pittsburgh, Pa.
   Assistant Engineer, P. & L.E. Ry.
1. O. MCKAY, O.L.S., Walkerville, Ont.
   Civil Engineer and Surveyor.

1886.

1. A. M. BOWMAN, D.L.S., Pittsburgh, Pa.
Pennsylvania Contracting Co.
1. E. B. HERMON, D. & O.L.S., Vancouver, B.C.
Assistant Engineer Vancouver Power Co.
1. ROBERT LAIRD, O.L.S., Haileybury, Ont.
Laird & Routley, Engineers and Surveyors.
1. T. KENNARD THOMSON, C.E., M. Can. Soc. C.E., M. Am. Soc. C.E., Hudson Terminal Building, New York.
Consulting Engineer.
1. H. G. TYRRELL, C.E., A.M. Can. Soc. C.E., 540 Judson Ave., Evanston, Ill.
Consulting Engineer.

1887.

1. J. C. Burns (deceased.)
1. A. E. LOTT, Los Angeles, Cal.
Consulting Railway Engineer, 441 Bradbury Building.
1. A. L. McCULLOUGH, O.L.S., B.C.L.S., A.M. Can. Soc. C.E., Nelson, B.C.
Engineer and Surveyor.
1. F. MARTIN, M.B., O.L.S.,
Physician.
1. C. H. PINHEY, D. & O.L.S., 110 Wellington St., Ottawa, Ont.
1. J. ROGERS, O.L.S., Mitchell, Ont.
Town Engineer.

1888.

1. J. F. APSEY, O.L.S., 3205 Wallbrook Ave., Baltimore, Md.
Assistant Division Engineer, Baltimore Sewerage Commission.
1. W. T. ASHBRIDGE, C.E., 1444 Queen St. E., Toronto, Ont.
Engineer and Surveyor.
1. EDWARD F. BALL, A.M. Can. Soc. C.E., 335 Madison Ave., New York, N.Y
Chief Assistant Engineer, Land and Tax Department, N. Y. Central & Hudson River Railroad.
1. D. B. BROWN, O.L.S., Quebec, P.Q.
Locating Engineer, Transcontinental Ry. (G.T.P.)
1. C. M. CANNIFF, Toronto, Ont.
Fielding & Canniff Co., Consulting Engineers.
1. H. J. CHEWETT, B.A.Sc., C.E., A.M. Can. Soc. C.E., Manning Arcade, Toronto, Ont.
Mechanical Engineer, Evans Rotary Engine Co., Ltd.
1. J. GIBBONS, D. & O.L.S., Ottawa, Ont.
Surveying Staff, Department of Interior.
1. R. McDOWALL, O.L.S., C.E., A.M. Can. Soc. C.E., Owen Sound, Ont.
Town Engineer.
1. G. W. McFARLEN, O.L.S., Toronto, Ont.
City Engineer's Staff.
1. C. J. MARANI, Anacortes, Wash.
Designing and Consulting Structural Engineer for the Russia Cement Co
1. G. R. MICKLE, B.A., Toronto, Ont.
Mine Assessor, Province of Ontario.
1. J. H. MOORE, O.L.S.., Smith's Falls, Ont.
Town Engineer.

1. G. H. Richardson, Edmonton, Alta.
Managing Director, Yellowhead Pass Coal & Coke Co.
1. K. Rose, Curry Bldg., Toronto.
Manager, Evans Rotary Engine Co. of Canada.
1. J. E. Ross, D.& O.L.S., Kamloops, B.C.
Surveying Staff, Department of Interior.
1. C. H. C. Wright, B.A.Sc., Toronto, Ont.
Professor of Architecture, University of Toronto.

1889.

1. B. Carey, Toronto, Ont.
1. W. J. Chalmers, Pittsburgh, Pa.
With Vanport Beaver Co.
1. W. A. Clement, M. Can. Soc. C.E., Vancouver, B.C.
City Engineer.
1. G. F. Hanning, 177 Bloor St. E., Toronto, Ont.
1. H. E. T. Haultain, C.E., M. Can. Soc. C.E., Toronto, Ont.
Professor of Mining Engineering, University of Toronto.
1. J. Irvine (deceased.)
1. D. D. James, B.A., B.A.Sc., 227 George St., Toronto.
Surveyor.
1. F. X. Mill (deceased.)
1. H. K. Moberley, D. & S.L.S., Moosomin. Sask.
District Engineer and Surveyor.
1. T. R. Rosebrugh, M.A., Toronto, Ont.
Professor of Electrical Engineering, University of Toronto.
1. T. Wickett, M.D., 362 Cannon St. E., Hamilton, Ont.
Physician.

1890.

5. W. E. Boustead (deceased.)
1. F. M. Bowman, O.L.S., C.E., Pittsburgh, Pa.
Secretary and Structural Engineer, Riter-Conley Mfg. Co.
1. M. A. Bucke, M.E. (deceased.)
1. G. D. Corrigan (deceased.)
1. J. A. Duff, B.A. (deceased.)
1. A. B. English, (deceased.)
1. N. L. Garland, 76 Wellington St. W., Toronto, Ont.
1. J. Hutcheon, O.L.S., Guelph, Ont.
City Engineer.
1. W. L. Innes, O.L.S., C.E., Simcoe, Ont.
Manager, Dominion Canners, Ltd.
1. E. B. Merrill, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E., Toronto, Ont.
Consulting Engineer, Toronto General Trusts Building.
1. J. R. Pedder (deceased.)
3. R. A. Ross, E.E., 80 St. Francois Xavier St., Montreal, Que.
Consulting Electrical and Mechanical Engineer.
1. T. H. Wiggins, O.L.S., Saskatoon, Sask.
Civil Engineer and Dom. Land Surveyor.
1. W. J. Withrow, Ottawa, Ont.
Patent Examiner, Patent Office.

1891.

1. H. J. BEATTY, O.L.S., Eganville, Ont.
Engineer and Surveyor.
1. T. R. DEACON, O.L.S., M. Can. Soc. C.E., Winnipeg, Man.
President and General Manager, Manitoba Bridge & Iron Works,Ltd.
1. C. W. DILL, M. Can. Soc. C.E., Toronto, Ont.
C. W. Dill & Co., Civil Engineers and Contractors, 318 Continental Life Building.
5. O. S. JAMES, B.A.Sc., 227 George St., Toronto, Ont.
1. A. LANE (deceased.)
1. J. E. MCALLISTER, B.A.Sc., C.E., Greenwood, B.C.
Manager, British Columbia Copper Co., Ltd.
3. E. B. MERRILL, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E., Toronto, Ont.
Consulting Engineer, Toronto General Trusts Building.
1. J. E. A. MOORE, C.E., 10074 Kee Mar Court, Cleveland, O.
Consulting and Contracting Engineer.
1. W. NEWMAN, O.L.S., A.M. Can. Soc. C.E., Windsor, Ont.
Consulting Engineer.
1. J. K. ROBINSON (deceased.)
1. W. B. RUSSEL, 1307 Traders Bank Bldg., Toronto, Ont.
Civil Engineer and Contractor.
1. G. E. SILVESTER, O.L.S., M. Am. Inst. M.E., Copper Cliff, Ont.
Chief Engineer, Canadian Copper Co.
1. H. D. SYMMES, Niagara Falls S.,Ont.
Engineer and Contractor.

1892.

1. J. R. ALLAN, O.L.S., Renfrew, Ont.
1. T. H. ALISON, B.A.Sc., C.E., Bayonne, N.J.
Secretary and Chief Engineer, Bergen Point Iron Works.
1. A. G. ANDERSON, Port Dover, Ont.
Hardware Merchant.
1. C. FAIRCHILD, D. & O.L.S., Brantford, Ont.
Surveying Staff, Department of Interior.
1. J. B. GOODWIN, B.A.Sc., Portland, Oregon.
Superintendent Mt. Hood Ry. & Power Co.
4. C. E. LANGLEY, Continental Life Bldg., Toronto, Ont.
Langley & Howland, Architects.
1. A. T. LAING, B.A.Sc., Toronto, Ont.
Secretary and Lecturer, Faculty of Applied Science, University of Toronto.
1. E. J. LASCHINGER, B.A.Sc., M.E., Johannesburg, Transvaal, S.A.
Mechanical Engineer, H. Eckstein & Co.
5. W. L. LAWSON, B.A.Sc., Sterling, Col.
Manager Great Western Sugar Co.
3. W. A. LEE, B.A.Sc. (deceased.)
1. B. MCENTEE, B.A.Sc., 38 Queen St. E., Toronto.
Stationer.
3. C. G. MILNE, B.A.Sc. (deceased.)
1. CHAS. H. MITCHELL, B.A.Sc., C.E., M. Can. Soc. C.E., M. Am. Soc. C.E.
Consulting Hydro-Electric Engineer, Trader's Bank Bldg., Toronto.
1. N. L. PLAYFAIR, Midland, Ont.
Superintendent Playfair Lumber Co.
1. J. M. PRENTICE (deceased).

1892—*Continued.*

1. J. A. ROSS, Cleveland, Ohio.
Designer L. S. & M. S. Railway, Engineering Office.
1. ALBERT N. SMITH, Youngstown, Ohio.
Engineer, Wm. B. Pollock Co.
1. R. W. THOMSON, B.A.Sc., M.E., 4 Charles St. W., Toronto, Ont.
Mining Engineer.
3. A. V. WHITE, M.E., Toronto, Ont.
Mechanical Engineer.

1893.

1. A. G. ARDAGH, Barrie, Ont.
Land Surveyor and Civil Engineer.
4.*H. F. BALLANTYNE, B.A.Sc., 244 Fifth Ave., New York, N.Y.
Architect.
1. G. L. BROWN, O.L.S., A.M. Can. Soc. C.E., Morrisburg, Ont.
Civil Engineer and Land Surveyor.
1.*L. C. CHARLESWORTH, D.L.S., Edmonton, Alta.
Director of Surveys for Alberta.
1. T. H. DUNN, O.L.S., Winchester, Ont.
Engineer and Surveyor.
1. J. M. R. FAIRBAIRN, P.L.S., Westmount, Que.
Assistant Engineer, C.P.R.
4.*W. FINGLAND, 334 Portage Ave., Winnipeg, Man.
Architect.
1. C. FORRESTER, Toronto, Ont.
1.*WALTER J. FRANCIS, C.E., M. Can. Soc. C.E., M. Am. Soc. C.E., Montreal, Que.
Walter J. Francis & Co., Consulting Engineers, 232 St. James St.
3.*A. R. GOLDIE, Galt, Ont.
Manager, Goldie & McCulloch Co.
3. S. C. HANLY, Midland, Ont.
Midland Engine Works Co.
4.*J. KEELE, B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.
1. J. T. LAIDLAW, B.A.Sc., M.E., Cranbrook, B.C.
Consulting Mining Engineer.
3. F. L. LASH, Bandoeng, Java.
Manager, Electrical Supply Co., Board of Trade Building.
1. A. L. MCALLISTER, B.A.Sc., 612 Continental Life Bldg., Toronto, Ont.
Consulting Engineer.
1. T. J. MCFARLEN, Port Arthur, Ont.
Chemist, Atikakan Iron Co.
1.*A. J. MCPHERSON, B.A.Sc., D.L.S., Regina, Sask.
City Commissioner.
1. A. F. MACALLUM, B.A.Sc., C.E., Hamilton, Ont.
City Engineer.
1. W. T. MAIN, Wells St. Depot, Chicago, Ill.
Division Engineer, C. & N. W. Ry.
1. V. G. MARANI, Cleveland, Ohio.
City Building Inspector, City Hall.
1. W. MINES, B.A.Sc., Cleveland, Ohio.
With Brown Hoisting Co.

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*Diploma with honours.

1893—*Continued.*

3.*J. M. ROBERTSON, Montreal, P.Q.
Consulting Engineer.
1. R. RUSSELL, Pembroke, Ont.
Railway Contractor.
1.*F. N. SPELLER, B.A.Sc., Pittsburgh, Pa.
Metallurgical Engineer, National Tube Co.
1. H. R. SQUIRE, B.A., Sc. O.L.S. (deceased.)
1. W. V. TAYLOR, O.L.S., A.M. Can. Soc. C.E., Quebec, P.Q.
Quebec Harbour Commissioners.
1.*R. B. WATSON (deceased).

1894.

3.*R. W. ANGUS, B.A.Sc., Toronto, Ont.
Professor of Mechanical Engineering, University of Toronto.
1. H. F. BARKER, Box 31, Halifax, N.S.
1. A. T. BEAUREGARD, B.A.Sc., Verona, N.J.
Laboratory Engineer, Public Service Corporation of New Jersey.
1. A. E. BERGEY, Pittsburgh, Pa.
Carnegie Technical School.
3. D. G. BOYD, Toronto, Ont.
Draftsman, Public Works Department.
3. W. A. BUCKE, Toronto, Ont.
District Manager, Canadian General Electric Co.
1. J. CHALMERS, O.L.S., A. M. Can. Soc. C.E., Edmonton, Alta.
Structural Engineer, Department of Public Works.
4.*J. A. EWART, B.A.Sc., 193 Sparks St., Ottawa, Ont.
Architect.
3. W. J. HERALD, B.A.Sc., Toronto, Ont.
Engineering Department, Canada Foundry Co.
3. H. E. JOB, B.A.Sc., Hamilton, Ont.
Manufacturer of Electrical Machinery and Apparatus.
3. A. C. JOHNSTON, B.A.Sc., M.E., Philadelphia, Pa.
Vice-President and Chief Engineer, The J. M. Dodge Co.
1. S. M. JOHNSTON, B.A.Sc., B.C.L.S. Greenwood, B.C.
1. J. E. JONES, Engineers' Club, New York, N.Y.
3. N. M. LASH, Montreal, P.Q.
Assistant Electrical Engineer, Bell Telephone Co.
1.*A. L. MCTAGGART, B.A.Sc., Rockefeller Bldg., Cleveland, O.
Office of A. G. McKee, Consulting Engineer.
3.*W. MINTY, B.A.Sc., Blackburn, Eng.
With Messrs. Yates & Thom, Ltd., Engineers.
3. C. J. NICHOLSON, Hamilton, Ont.
Assistant Engineer, Hamilton, Guelph & Waterloo Ry.
1. H. ROLPH, Montreal, Que.
Secretary, John S. Metcalf Co., Ltd.
1. J. D. SHIELDS, B.A.Sc., Toronto, Ont.
Sewer Engineer, Staff of City Engineer.

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*Degree with honours.

1894—*Continued.*

1. ANGUS SMITH, O.L.S., A.M. Can, Soc. C.E., Regina, Sask.
City Engineer.
3. A. K. SPOTTON, Galt, Ont.
Chief Engineer, Goldie & McCulloch Engine Works.
3. R. T. WRIGHT, B.A.Sc., East Pittsburgh, Pa.
Engineering Department, Westinghouse Machine Co.

1895.

1. J. ARMSTRONG, B.A.Sc., Quebec, Que.
District Engineer, G.T.P. Ry.
3. A. E. BLACKWOOD, 30 Church St., New York.
Manager New York Office, Sullivan Machinery Co.
1. E. J. BOSWELL, D.L.S., Toronto, Ont.
With C.P.R.
3. G. BREBNER (deceased.)
3. W. M. BRODIE, B.A.Sc., Pittsburgh, Pa.
With the Green Engineering Co. of Chicago.
3. L. L. BROWN, 115 Broadway, New York.
Superintendent, The Foundation Co.
4. R. J. CAMPBELL, Chicago, Ill.
Artist, Chicago Tribune.
3. A. W. CONNOR, B.A., C.E., 36 Toronto St., Toronto, Ont.
Bowman & Connor, Consulting Engineers.
1. J. S. DOBIE, B.A.Sc., O. & D.L.S., Thessalon, Ont.
1. F. W. GUERNSEY, Bankhead, Alta.
Assistant General Manager, Bankhead Mines, Ltd.
4.*A. H. HARKNESS, B.A.Sc., Toronto, Ont.
Structural Engineer, Confederation Life Building.
3. H. S. HULL, B.A.Sc., Johnstown, Pa.
Structural Drawing, Cambria Steel Co.
3.*J. McGOWAN, B.A., B.A.Sc., Toronto, Ont.
Associate Professor of Applied Mechanics, University of Toronto.
3. W. N. McKAY, Georgetown, Ont.
Manager, Bank of Hamilton.
3. H. L. McKINNON, B.A.Sc., Cleveland, Ohio.
Vice-President of The C. O. Bartlett & Snow Co.
1. W. W. MEADOWS, D. & O.L.S., Maple Creek, Sask.
Department of Public Works.
1. F. J. ROBINSON, D. & O.L.S., Regina, Sask.
Deputy Minister of Public Works, Saskatchewan.
3. F. T. STOCKING, Toronto, Ont.
Hydro-Electric Commission.
3. R. C. C. TREMAINE, B.A.Sc. (Deceased.)

1896.

2.*J. W. BAIN, B.Sc., Toronto, Ont.
Associate Professor of Applied Chemistry, University of Toronto.
2. L. T. BURWASH, Dawson, Y.T.
Mining Recorder.
3.*G. M. CAMPBELL, Riverside, Ill.
Superintendent, Power Apparatus Shops, Western Electric Co.

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*Diploma with honours.

1896—*Continued.*

2. J. A. Decew, B.A.Sc., 615 Canadian Express Bldg., Montreal, Que.
Consulting Chemical Engineer.
3.*H. P. Elliott, B.A.Sc., E.E., Pittsburgh, Pa.
Electrical Engineer, Westinghouse Electric and Manufacturing Co.
3. W. C. Gurney, Toronto, Ont.
Vice-President, Gurney Foundry Co., Ltd.
3.*H. V. Haight, B.A.Sc., Sherbrooke, P.Q.
Chief Engineer, Canadian Rand Drill Co. Ltd.
1. W. F. Laing, (deceased.)
3. R. R. Lawrie, (deceased.)
3. C. MacBeth, B.A.Sc., (deceased.)
3. J. A. MacMurchy, Pittsburgh Pa.
Chief Draftsman, Turbine Department, Westinghouse Machine Co.
1. T. Martin, B.A.Sc., Calgary, Alta.
Assistant Divisional Engineer, C.P.R.., Western Division.
3. R. R. Scheibe, Toronto, Ont.
Sales Manager, Brigdens, Ltd.

1897.

2. E. Andrews, B.Sc., A.M.I. C.E., Portmadoc, N. Wales.
Resident Engineer, Maenofferen Slate Quarry Co., Ltd.
2.*J. A. Bow, Great Falls, Mont.
B. & M. Smelter.
1. H. S. Carpenter, B.A.Sc., O.L.S., Regina, Sask.
Superintendent of Highways, Department of Public Works.
5. H. W. Charlton, B.A.Sc., Ottawa, Ont.
Assistant Chemist at Experimental Farm.
4.*E. A. Forward, A.M. Can. Soc. C.E., Lockport, Man.
Engineer-in-charge, St. Andrew's Lock and Dam.
3.*A. T. Gray, B.A.Sc., Schenectady, N.Y.
Designing Engineer on Steam Turbines, General Electric Co.
3. W. A. B. Hicks, Buffalo, N.Y.
With Lackawanna Steel Co.
4. C. F. King, Toronto, Ont.
Rep. of Mortimer Co. of Ottawa.
1. H. W. Proudfoot, (deceased.)
2.*A. H. A. Robinson, B.A.Sc., M.A.I. M.E., Haileybury, Ont.
Mine Inspector.
4. W. F. Scott, Toronto, Ont.
Structural Engineer and Consulting Architect.
3.*W. R. Smiley, B.A.Sc., Cleveland, Ohio.
With Wellman-Seaver-Morgan Engineering Co.
2.*W. W. Stull, B.A.Sc., O.L.S., Sudbury, Ont.
Surveyor and Mining Engineer.
1.*M. B. Weekes, B.A.Sc., D.L.S., Regina, Sask.
Department of Public Works.
1. E. A. Weldon, Winnipeg, Man.
Real Estate Broker, 413 McIntyre Block.

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*Diploma with honours.

1898.

1. W. H. Boyd, B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.
2. W. E. H. Carter., B.A.Sc., Toronto, Ont.
Consulting Mining Engineer, 83 & 85 Front Street, East.
3. E. H. Darling, A.M. Can. Soc. C.E., Hamilton, Ont.
Resident Engineer East Hamilton Plant, Hamilton Bridge Works Co.
1. W. F. Grant, B.A.Sc., Sault Ste. Marie, Ont.
City Engineer.
1. J. S. Kormann, B.A.Sc., Toronto, Ont.
Manager, Kormann Brewing, Ltd.
3. J. E. Lavrock, Vancouver, B.C.
Draftsman, Hermon & Burwell.
4. D. MacKintosh, B.A.Sc., B. Arch., New York, N.Y.
Chief Superintendent F. M. Andrews & Co., Metropolitan Tower.
1.*F. W. McNaughton, O.L.S., Winnipeg, Man.
Deputy Minister of Public Works.
1. J. H. Shaw, O.L.S., North Bay, Ont.
Surveyor and Engineer.
3. A. E. Shipley, B.A.Sc., Nelson, B.C.
Manager, Nelson Coke & Gas Co.
3.*F. C. Smallpiece, B.A.Sc., Montreal, Que.
Assistant Manager, Canadian General Electric Co.
1.*R. W. Smith, P.L.S., Revelstoke, B.C.
Surveyor.
1.*J. A. Stewart, M.A., Hamilton, Ont.
Engineer and Contractor, 67 Federal Life Building.
1.*H. L. Vercoe, Montreal, Que.
Chief Draftsman, Grand Trunk Pacific Ry.
3. T. A. Wilkinson, New York, N.Y.
Statistician, Westinghouse Church Kerr Co.
3. D. A. Williamson, B.A.Sc., Hamilton, Ont.
With Hamilton Bridge Works Co.

1899.

3.*T. Barber, Meaford, Ont.
Hydraulic Engineer, Chas. Barber & Sons.
2. J. T. M. Burnside, B.A.Sc., Montreal, Que.
3. L. B. Chubbuck, B.A..Sc., E.E., Hamilton, Ont.
Engineer, Canadian Westinghouse Co.
2. G. A. Clothier, Rossland, B.C.
Engineer, Le Roy Mining Co.
1. C. Cooper, Koekuk, Iowa.
Koekuk & Hamilton Water Power Co.
2. R. W. Coulthard. B.A.Sc., Blairmore, Alta.
General Manager, West Canadian Collieries, Ltd.
3. J. A. Craig, B.A.Sc., Toronto, Ont.
Office of Willis Chipman, C.E.,
2. J. C. Elliott, Kelso, Ont.
3. W. E. Foreman, B.A.Sc., Pittsburgh, Pa.
Construction Dept., Westinghouse Electric and Mfg. Co.
3. E. Guy, B.A.Sc., Winnipeg, Man.
With Smith, Kerry & Chace.

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*Diploma with honours.

1899—*Continued.*

3.*W. ALMON HARE, B.A.Sc., A.M., Can. Soc. C.E., Toronto, Ont.
Secy-Treas. and Chief Engineer, The Standard Engineering Co.
1. R. LATHAM, B.A.Sc., Hamilton, Ont.
Chief Engineer, T. H. & B. Ry.
3. W. MONDS, B.A.Sc., 36 Toronto St., Toronto, Ont.
Clark & Monds, Consulting Engineers.
1. J. PATTERSON, B.A., Toronto, Ont.
Physicist, Dominion Observatory.
3. A. S. H. POPE, B.A.Sc., Portland, Oregon.
Pope & Wilcox, Electrical & Mechanical Engineers.
2. G. E. REVELL, B.A.Sc., Nelson, B.C.
3.*E. RICHARDS, B.A.Sc., Toronto, Ont.
Purchasing Agent, Toronto Hydro-Electric System.
3. G. A. SAUNDERS, Wilkinsburg, Pa.
With Westinghouse Electric & Manufacturing Co.
1.*T. SHANKS, B.A.Sc., D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1.*D. C. TENNANT, B.A.Sc., Lachine Locks, Que.
Chief Draftsman with Dominion Bridge Co.
3. W. W. VANEVERY, Sault Ste Marie, Ont.
Soo Corporation.
3. W. E. WAGNER, B.A.Sc., Toronto, Ont.
With Toronto Ferry Co.
2. G. H. WATT, D.L.S., Ottawa, Ont.
Dominion Land Surveyor.
3. E. YEATES, Hamilton, Ont.
Manager, London Machine Tool Co., Ltd.

1900.

1. J. L. ALLAN, A.M. Can. Soc. C.E., Dartmouth, N.S.
Asst. Engineer, Intercolonial Ry.
2. E. G. R. ARDAGH, B.A.Sc., Toronto, Ont.
Lecturer in Applied Chemistry, University of Toronto.
3. J. A. BAIN, Ottawa, Ont.
Structural Engineer, Dept. of Public Works of Canada.
3. J. H. BARLEY, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
2.*M. C. BOSWELL, M.A., Ph.D., Toronto, Ont.
Lecturer in Organic Chemistry, University of Toronto.
1. L. T. BRAY, D. & O.L.S., Edmonton, Alta.
District Engineer and Surveyor.
3. J. CLARK, Pittsburgh. Pa.
Electrician, P. & L. E. R. R.
2. J. E. DAVISON, B.A.Sc., Fort William.
Engineering Staff, Canadian Northern Ry.
3. E. D. DICKINSON, Schenectady, N.Y.
With General Electric Co.
3. G. W. DICKSON, B.A.Sc., Grand Mere, Que.
With Laurentide Paper Co.

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*Diploma with honours.

1900—*Continued.*

2.*H. A. Dixon, B.A.Sc., M.L.S., Winnipeg, Man.
Division Engineer, Canadian Northern Railway.
2. C. H. Fullerton, O.L.S., New Liskeard, Ont.
Engineer and Surveyor.
3. W. S. Guest, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
3. W. Hemphill, B.A.Sc., E.E., Buffalo, N.Y
Superintendent, Cataract Power & Conduit Co.
3. S. E. M. Henderson, 560 Homewood Ave., Peterboro, Ont.
Designing Engineer, Canadian General Electric Co.
3. J. A. Henry, Schenectady, N.Y.
Designing Engineer, General Electric Co.,
2. H. S. Holcroft, B.A.Sc., D.L.S., 108 St. Vincent St., Toronto, Ont.
Surveyor, Peace River District.
3. H. A. Johnson, 148 Clinton St., Toronto, Ont.
Manager, Johnston Oil Engine Co., Ltd.
3.J. C. Johnston, Boston, Mass.
Plant Inspector, Warren Bituminous Paving Co.
2.*J. A. Johnston, B.A.Sc., Ignace, Ont.
Contractor.
2. R. E. McArthur, Montreal, Que.
Const. Dept., C.P.R.
2. J. G. McMillan, B.A.Sc., 424 Wellington Place, Toronto, Ont.
Geologist, T. & N. O. Ry.
3. L. Haun Miller, Cleveland, Ohio.
Sales Agent, Bethlehem Steel Co.
2. E. V. Neelands, B.A.Sc., Cobalt, Ont.
Hargrave Mines.
1.*E. H. Phillips, D.L.S., Saskatoon, Sask.
Phillips & Phillips, Civil Engineers and Surveyors.
2. J. R. Roaf, B.A.Sc., Michel, B.C.
Draftsman, Crow's Nest Pass Coal Co.
3.*C. H. E. Rounthwaite, Sault Ste Marie, Ont.
Chief Draftsman Algoma Central & Hudson Bay Ry.
2. H. W. Saunders, B.A.Sc., Gary, W. Va.
Division Engineer, U.S. Coal & Coke Co.
1. A. Taylor, D.L.S. & M.L.S., Portage La Prairie, Man.
Engineer and Surveyor.
1. W. C. Tennant, B.A.Sc., (deceased.)
2. S. M. Thorne, B.A.Sc., Cobalt, Ont.
Engineering Staff, Silver Leaf Mine.
1. F. W. Thorold, B.A.Sc., Toronto, Ont.
Assistant City Engineer on Const. of Sewage System.
1. H. M. Weir, B.A.Sc. Pachuca, Mex.
With Real Del Morte Co.
3. F. D. Withrow, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture,.

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*Diploma with honours.

1901.

1. R. H. Barrett, B.A.Sc., O.L.S. (deceased.)
3. W. G. Beatty, Fergus, Ont.
Manager, Beatty Bros., Implement Manufacturers.
3. G. M. Bertram, Joplin, Mo.
Representative of the Sullivan Machinery Co.
3. W. J. Bowers (deceased.)
3. E. T. J. Brandon, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Comm.
3. W. P. Brereton, B.A.Sc., Winnipeg, Man.
Assistant Engineer, Power Construction Dept.
3. J. T. Broughton, Scottdale, Pa.
Chief Engineer, Scottdale Foundry & Machine Co.
3.*W. G. Chace, B.A.Sc., Portland, Oregon.
With Mount Hood Ry. & Power Co.
3. A. G. Christie, Madison, Wis.
Asst. Professor of Steam Engineering, University of Wisconsin.
3. J. R. Cockburn, B.A.Sc., A.M. Can. Soc. C.E., Toronto, Ont.
Lecturer in Descriptive Geometry, University of Toronto.
1. W. A. Duff, Ottawa, Ont.
Assistant Bridge Engineer, Transcontinental Ry.
2.*D. E. Eason, B.A.Sc., Peterboro', Ont.
Division Engineer, Trent Valley Canal.
1.*S. Gagne, B.A.Sc., (deceased.)
3. N. R. Gibson, B.A.Sc., Winnipeg, Man.
Assistant Engineer, Power Const. Dept.
2. A. T. E. Hamer, Wahnapitae, Ont.
Engineering Staff, Canadian Northern Ry. Co.
1. C. Harvey, B.A.Sc., D.L.S., Kelowna, B.C.
Consulting Engineer and Surveyor.
2. F. C. Jackson, La Tuque, Que.
Jackson & Connelly, Contractors, N.T.C. Ry.
3.*A. Laidlaw, Kansas City, Mo.
District Manager, Trussed Concrete Steel Co.
3. W. C. Lumbers, Calgary, Alta.
Engineering Staff, C.P.R.
3. A. C. Macdougall, Massena, N.Y.
Asst. Superintendent, Aluminium Co. of America.
3. A. T. C. McMaster, B.A.Sc. Copper Cliff.
Engineer on Design & Construction, The Canadian Copper Co.
1. G. MacMillan, Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
3.*H. G. McVean, B.A.Sc., Moose Jaw, Sask.
Contractor and Engineer.
2. W. C. Matheson, Joliette, Que.
With McKenzie Mann Co.
3. H. T. Middleton, Englewood Cliffs, N.J.
2. J. L. R. Parsons, B.A., D.L.S., Winnipweg, Man.
Engineer and Surveyor.
1. G. H. Power, North Battleford, Sask.
Western Canada Rep. of Willis Chipman, C.E.
3.*H. W. Price, B.A.Sc., Toronto, Ont.
Associate Professor of Electrical Engineering, University of Toronto.
1. H. P. Rust, B.A.Sc., A.M. Can. Soc. C.E., 49 Wall St., New York, N.Y.
Principal Asst. Engineer with Messrs. Viele, Blackwell & Buck.

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*Diploma with honours.

1901—*Continued,*

3. M. V. Sauer, B.A.Sc., Niagara Falls, Ont.
Assistant Engineer, Ontario Power Co.

3. W. H. Stevenson, B.A.Sc., Monadnock Block, Chicago, Ill.
Secretary Power Plant Speciality Co.

1. R. D. Willson, Winnipeg, Man.
Assistant City Engineer.

1902.

3.*H. G. Barber, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.

1. W. J. Blair. B.A.Sc., D. & O.L.S., New Liskeard, Ont.
Civil Engineer and Surveyor.

3. J. M. Brown, Pittsburgh, Pa.
With Westinghouse Machine Co., Steam Turbine Dept.

2. W. G. Campbell, Toronto, Ont.

2. A. R. Campbell, Toronto, Ont.
Universal Mfg. Co., Ltd., St. James Chambers.

3. C. G. Carmichael (deceased.)

2.*W. Christie, B.A.Sc., Prince Albert, Sask.
Dominion Land Surveyor.

2. F. T. Conlon Thorold, Ont.
Welland Canal Engineering Staff.

3. H. V. Connor, Pittsburgh, Pa.
With Westinghouse Electric and Mfg. Co.

2.*M. T. Culbert (deceased.)

2. R. Cumming, Toronto, Ont.
General Contractor, 50 Front St. E.

1. W. E. Douglas, B.A., Toronto, Ont.
Contractor, 152 Bay St.

3.*R. J. Dunlop, Toronto, Ont.
With Canadian Westinghouse Co.

2. W. M. Edwards, B.A.Sc., Lethbridge, Alta.
Duff & Edwards.

3. W. Elwell (deceased.)

2. J. M. Empey, B.A.Sc., O.L.S., D.L.S., Calgary, Alta.
District Engineer and Surveyor, Dept. of Public Works.

2.*D. L. H. Forbes, 306 Manning Chambers, Toronto, Ont
Mining and Metallurgical Engineer.

1.*A. E. Gibson, B.A.Sc., Toronto, Ont.
Office of Haney & Miller, Engineers and Contractors.

3. A. C. Goodwin, Pittsburgh, Pa.
Draftsman, Aluminium Co. of America.

3. C. P. Henwood, McKeesport, Pa.
Draftsman, National Tube Co.

3. D. M. Johnston, Toronto, Ont.
With Hydro-Electric Power Comm.

2. R. H. Knight, B.A.Sc., D.L.S., Edmonton, Alta.
Driscoll & Knight, Engineers and Surveyors.

5.*F. L. Langmuir, B.A.Sc., Ph.D., Toronto, Ont.
Chemist, M. Langmuir Mfg. Co.

3. A. H. McBride, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Commission.

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*Diploma with honours.

1902—*Continued.*

1. A. L. McLENNAN, D.L.S., Toronto, Ont.
Office of York Co. Engineer.
3. J. T. MACKAY, Toronto, Ont.
Student in Faculty of Medicine, University of Toronto.
3. J. F. S. MADDEN, Winnipeg, Man.
Erecting Engineering Dept., Can. Gen. Electric Co.
3.*C. H. MARRS, Pittsburgh, Pa.
Designing Engineer, Riter-Conley Mfg. Co.
3. P. MATHISON, B.A.Sc., Hamilton, Ont.
Electrical Eng., Canadian Westinghouse Co.
3. R. S. MENNIE, Pittsburgh, Pa.
With Crucible Steel Co. of America.
2. H. H. MOORE, D.L.S., A.M. Can. Soc. C.E., Calgary, Alta.
Dominion Land Surveyor and Engineer.
1.*T. S. NASH, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. G. G. POWELL, B.A.Sc., Toronto, Ont.
Assist. City Engineer, Roadways Dept.
1.*W. F. RATZ, D.L.S. (deceased.)
3. H. D. ROBERTSON, B.A.Sc., Toronto, Ont.
Miller, Cumming & Robertson, Engineers and Contractors.
3.*D. SINCLAIR, B.A.Sc. (deceased.)
2.*I. J. STEELE, D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
3. W. H. SUTHERLAND, B.A.Sc., 107 St. James St., Montreal, Que.
Assistant Engineer, Montreal Water and Power Co.
3.*T. F. TAYLOR, 494 Concord Ave,. Toronto,Ont.
2.*C. M. TEASDALE, Concord, Ont.
Surveyor.
3. A. A. WANLESS, Sidney Mines, N.S.
Instructor, Department of Technical Education.
3. H. J. ZAHN, B.A.Sc., 235 Calumet St., Detroit, Mich.

1903.

3. H. G. ACRES, Toronto, Ont.
Asst. Engineer, Hydro-Electric Power Commission.
1. J. G. R. ALISON, Pittsburgh, Pa.
With Riter-Conley Mfg. Co.
3.*H. H. ANGUS, B.A.Sc., Toronto, Ont.
Mechanical Engineer, Confederation Life Bldg.
3. J. A. BEATTY, Peterboro', Ont.
Morrow & Beatty, Contractors.
3.*J. BRESLOVE, East Pittsburgh, Pa.
Steam Turbine Engineer, Westinghouse Machine Co.
2. J. H. BURD, O.L.S., Sudbury, Ont.
Engineer and Surveyor.
1.*E. L. BURGESS, D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
2. N. A. BURWASH, B.A.Sc., Whitehorse, Y.T.
Surveyor.
1. F. F. CLARKE, D. & O.L.S., A.M. Can. Soc. C.E., Toronto, Ont.
Divisional Engineer, Can. Northern Ry.
2. C. L. COULSON, Welland, Ont.

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*Diploma with honours.

1903—*Continued.*

3.*A. E. Davison, B.A.Sc., Toronto, Ont.
Engineering Staff, Hydro-Electric Power Commission.
3. C. J. Fensom, B.A.Sc., M.E., Toronto, Ont.
Consulting Mechanical Engineer, 43 Victoria St.
2.*E. O. Fuce, O.L.S., Galt, Ont.
Consulting Civil Engineer.
3.*F. A. Gaby, B.A.Sc., ! Toronto, Ont.
Assistant Chief Engineer, Hydro-Electric Power Commission.
1. J. C. Gardner, B.A.Sc., Niagara Falls, Ont.
City Engineer.
3. R. E. George, Dover, N.H.
Electrical and Gas Engineer, The United Gas & Electric Co.
1.*P. Gillespie, B.A.Sc., Toronto, Ont.
Associate-Professor of Applied Mechanics, University of Toronto.
1. W. A. Gourlay, Toronto, Ont.
Engineering Staff, C.P.R.
2. J. F. Hamilton, B.A.Sc., C.E., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.
2. G. S. Hanes, B.A.Sc. O.L.S., North Vancouver, B.C.
City Engineer.
2. F. Y. Harcourt, B.A., Port Arthur, Ont.
Engineer, Public Works Dept.
1. L. J. Hayes, Chicago, Ill.
Structural Engineer, Corn Products Refining Co.
1.*F. D. Henderson, Secy. Board of Examiners for D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
5.*J. A. Horton, New Ontario.
3. J. G. Jackson, Toronto, Ont.
Electrical Department, City Hall.
3. G. K. Johnston, Pefferlaw, Ont.
Merchant.
1. H. Johnston, O.L.S., Berlin, Ont.
City Engineer.
3. A. G. Lang, Toronto, Ont.
Underground Superintendent, Toronto Hydro-Electric System.
1.*A. J. Latornell, B.A.Sc., Edmonton, Alta.
City Engineer.
1.*H. J. McAuslan, B.A.Sc., O.L.S., North Bay, Ont.
Staff of T. & N. O. Ry.
3. J. A. McFarlane, B.A.Sc., Hamilton, Ont.
Chief Draftsman, Hamilton Bridge Works Co.
1.*A. L. McNaughton, Prince Rupert, B.C.
With G.T.P. Co.
5.*F. G. Marriott, B.A.Sc., Toronto, Ont.
Chemist and Supt. Asphalt Plant, City Testing Laboratory.
3.*C. A. Maus, Paris, Ont.
3.*M. L. Miller, Pittsburg, Pa.
Draftsman, McClintic-Marshall Construction Co.
3. P. H. Mitchell, Toronto, Ont.
Consulting Electrical Engineer, Trader's Bank Building.
2.*R. H. Montgomery, B.A.Sc., O. and D.L.S., Prince Albert, Sask.
Engineer and Surveyor.

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*Diploma with honours.

1903—*Continued*

1. F. A. MOORE, Winnipeg, Man.
Engineering Dept. C. N. Ry.
3. E. E. MULLINS, Limon, Costa Rica.
Supt. Motive Power, Northern Ry. Co.
3. I. H. NEVITT, B.A.Sc., Toronto, Ont.
With Bell Telephone Co.
1. E. W. OLIVER, B.A.Sc., C.E., Toronto, Ont.
Assistant to Chief Engineer, Canadian Northern Ry. System.
3. J. P. OLIVER, Arabi, La.
Supt. of Construction, The American Sugar Refining Co.
3. J. D. PACE, B.A.Sc.,
3. B. B. PATTEN, B.A.Sc., St. Catharines, Ont.
Rutherford & Patten, Engineers and Surveyors.
2. D. H. PHILP, Ottawa, Ont.
Georgian Bay Canal Survey.
3.*D. H. PINKNEY, Elyria, O.
National Tube Dept., U.S. Steel Corpoartion.
2. T. H. PLUNKETT, B.A.Sc., Meaford, Ont.
1. D. F. ROBERTSON, D.L.S., Ottawa, Ont.
3.*H. M. SCHIEBE, B.A.Sc., East Pittsburgh, Pa.
Engineer, Westinghouse Electric & Mfg. Co.
1.*H. L. SEYMOUR, Edmonton, Alta.
Sanders & Seymour, Civil Engineers and Dominion Land Surveyors.
1. J. H. SMITH, D. & O.L.S., Edmonton, Alta.
Engineer and Surveyor, 140 Jasper Ave. W.
3. H. G. SMITH, B.A.Sc., (deceased.)
3. S. L. TREES, B.A.Sc., Toronto, Ont.
Supt. Mfg. Dept., Samuel Trees & Co., 42 Wellington St. East.
2. J. E. UMBACH, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. J. WALDRON, D.L.S., Moose Jaw. Sask.
Engineer and Surveyor.
3.*S. B. WASS, 355 Sunnyside Ave., Toronto, Ont.
With C.P.R. Co.
3. J. A. WHELIHAN, Box 165, Regina, Sask.
3. H. F. WHITE, London, Ont.
Assistant Superintendent, The Geo. White & Sons Co,. Ltd.
2.*C. G. WILLIAMS, B.A.Sc., Elk Lake, Ont.
Superintendent, Otisse Mining Co.
1.*N. D. WILSON, B.A.Sc., Lumsden Bldg., Toronto.
Engineer and Surveyor.
1.*C. R. YOUNG, B.A.Sc., A.M. Can. Soc. C.E., Toronto, Ont.
Lecturer in Structural Engineering, University of Toronto.

1904.

3.*J. H. ALEXANDER, B.A., C.E., Assoc. M. Am. Soc. C.E.,
Engineer and Contractor. Winnipeg, Man.
3.*J. H. BARRETT, Toronto, Ont.
With the Wm. Davies Co., Ltd.
3. M. B. BONNELL, Bobcaygeon, Ont.
3. T. D. BROWN, B.A.Sc., Calgary, Alta.
Canadian Fairbanks Co.

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*Diploma with honours.

1904—*Continued.*

3. F. W. BURNHAM, B.A.Sc., Montreal, Que.
With Imperial Tobacco Co.
3. J. W. CALDER, B.A.Sc., Fort William, Ont.
With Hydro-Electric Commission.
1. N. C. CAMERON, 4172 Dorchester St., Montreal, Que.
Dominion Engineering and Construction Co.
1. A. J. CAMPBELL, B.A.Sc., Collingwood, Ont.
3.*A. M. CAMPBELL, B.A.Sc., Chilliwock, B.C.
4. J. B. CHALLIES, Ottawa, Ont.
Hydraulic Engineer, Department of the Interior.
2. C. A. CHILVER, Walkerton, Ont.
2. H. L. CHILVER, Moosehorn Bay, Man.
1. U. W. CHRISTIE, B.A.Sc., O.L.S., Ottawa, Ont.
Astronomical Surveys Branch, Dept. of the Interior.
2. P. C. COATES, B.A.Sc., Revelstoke, B.C.
Mining Engineer.
1. S. B. CODE, Smith's Falls, Ont.
Town Engineer.
1.*T. F. CODE, B.A.Sc. (deceased.)
1.*W. A. COWAN, Farnham, Que.
Resident Engineer, C.P.R.
3.*S. E. CRAIG, B.A.Sc., Snelgrove, Ont.
1.*S. R. CRERAR, B.A.Sc., O.L.S., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
3. W. M. CURRIE, Hamilton, Ont.
Managing Director, Canada Steel Co., Ltd.
3. H. H. DEPEW, Fernie, B.C.
Supt., Crow's Nest Pass Electric Light and Power Co.
*Diploma with honours.
2. A. J. ELDER, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
2. J. G. FLECK, Vancouver, B.C.
Fleck Bros., Ltd.
1.*A. L. FORD, B.A.Sc., Prince Rupert, B.C.
Government Inspector, Dept. of Railways and Canals.
3. W. S. GIBSON, B.A.Sc., 38 Park Rd., Toronto, Ont.
1. J. N. GOODALL, Toronto, Ont.
Engineer, Niagara and Ontario Construction Co.
1. J. P. GORDON, Box 266, Dauphin, Man.
Engineering Staff, Willis Chipman, C.E.
3. W. W. GRAY, B.A.Sc.,
1. A. GRAY, B.A.Sc., Port Credit, Ont.
With St. Lawrence Starch Co.
3. W. K. GREENWOOD, B.A.Sc., Orillia, Ont
Town Engineer.
1. L. D. HARA, St. Catharines, Ont.
Assistant Engineer, Welland Canal Co.
3. C. J. HARRIS, B.A.Sc., Brantford, Ont.
With Brantford Screw Co.
1. J. B. HERON, B.A.Sc., Toronto, Ont.
c. o. *S. H. Sykes, 1577 Danforth Ave.*
1. E. M. M. HILL, Edmonton, Alta.
Engineering Dept., Canadian Northern Railway.

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*Diploma with honours.

1904—*Continued.*

2. S. N. HILL, 325 Waverly St., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
2. C. J. INGLES, Niagara Falls, Ont.
With Ontario Power Co.
1. E. A. JAMES, B.A.Sc., Toronto, Ont.
Engineer, York County Highway Commission.
1. P. V. JERMYN, B.A.Sc., 118 King St. West, Toronto, Ont.
C.P.R. Construction Department.
3. W. S. H. KEEFE, Fort Covington, N.Y.
Manager, Light, Heat and Power Co.
3. W. J. LARKWORTHY (deceased.)
3. O. B. MCCUAIG, B.A.Sc., Wenatchee, Wash.
Supt., Entiat Light and Power Co.
1. G. G. MCEWEN, B.A.Sc., Winchester, Ont.
Office of T. H. Dunn, O.L.S.
1.*W. G. MCFARLANE, B.A., B.A.Sc., 55 Elliott St., Toronto, Ont.
Engineer and Surveyor, Peace River Dist.
3.*C. P. MCGIBBON, B.A., Hamilton, Ont.
Canadian Westinghouse Co.
3. C. MCKAY, B.A.Sc. (deceased.)
1. D. MCMILLAN, Edmonton, Alta.
With C.N.R.
3. G. J. MANSON, Thorold, Ont.
With Manson Mfg. Co., Ltd.
1.*W. N. MOORHOUSE, Toronto, Ont.
Office of Sproatt & Rolph, Architects.
3. E. E. MOORE, Glen Falls, N.Y
Engineer, Inter-State Iron Co.
3. W. H. MUNRO, Peterborough, Ont.
With Peterborough Radial Ry.
3. G. PACE, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. W. S. PARDOE, B.A.Sc., Philadelphia, Pa.
Asst. Prof. in Civil Engineering, University of Pennsylvania.
3. J. PARIS, La Tuque, Que.
Resident Engineer, Trans. Ry.
2. J. PARKE, B.A.Sc., Havilah, Ont.
Chemist and Assayer.
3. W. J. PARKER, Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
3. W. J. PEAKER, Ottawa. Ont.
Topographical Surveys Branch, Dept. of the Interior.
3.*A. E. PICKERING, Sault Ste. Marie, Ont.
Supt., Lake Superior Power Co.
1. D. L. C. RAYMOND, B.A.Sc., Toronto, Ont.
The Bishop Construction Co., Ltd.
1. F. B. REID, B.A.Sc., Ottawa, Ont.
Astronomical Surveys Branch, Dept. of the Interior.
3.*M. R. RIDDELL, B.A.Sc., Toronto, Ont.
3. G. S. ROXBURGH, B.A.Sc., Winnipeg, Man.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
2. F. N. RUTHERFORD, B.A.Sc., St. Catharines, Ont.
Rutherford and Patten, Surveyors and Engineers.

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*Diploma with honours.

1904—*Continued.*

1.*J. D. SHEPLY, B.A.Sc., D.L.S., N. Battleford, Sask.
District Surveyor and Engineer.
3. F. W. SLATER, B.A.Sc., Schenectady, N.Y.
With General Electric Co.
3.*R. S. SMART, Ottawa, Ont.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. D. A. SMITH., B.A.Sc., Regina, Sask.
Consulting Engineer.
3. W. J. SMITHER, B.A.Sc., Toronto, Ont.
Fellow in Drawing, University of Toronto.
3. S. E. THOMSON, B.A.Sc., Niagara Falls, Ont.
Engineering Staff, Electrical Development Co.
3. C. J. TOWNSEND, B.A.Sc., Chicago, Ill.
Mechanical Engineer, Liquid Carbonic Co.
1. D. T. TOWNSEND, B.A.Sc., O.L.S., Winnipeg, Man.
C.P.R. Land Department.
1. A. V. TRIMBLE, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.
3. B. B. TUCKER, B.A.Sc., Morrisburg, Ont.
Resident Engineer, New York and Ontario Power Co.
2.*E. WADE, B.A., Welland, Ont.
Builder.
1.*E. W. WALKER, B.A.Sc., (deceased.)
3. J. P. WATSON, B.A.Sc., Montreal, Que.
Draftsman, Motive Power Dept., C.P. Ry.
1. J. M. WEIR, Toronto, Ont.
Sec'y.-Treasurer, The Toronto Plate Glass Importing Co., Ltd.
1.*A. F. WELLS, O.L.S., B.A.Sc., Toronto, Ont.
Wells & Gray, Ltd., Engineers and Contractors.
1. W. R. WORTHINGTON, B.A.Sc., Toronto, Ont.
Assistant Sewer Engineer, Staff of City Engineer.
3. W. F. WRIGHT, Toronto, Ont.
Sales Dept., Canadian General Electric Co.

1905.

2. H. W. ARENS (deceased.)
3. R. H. ARMOUR, 165 Broadway, New York.
Westinghouse Electric & Manufacturing Co.
3.*C. B. AYLESWORTH, Hamilton, Ont.
Draftsman, Canadian Westinghouse Co.
1.*W. BARBER, B.A.Sc., Toronto, Ont.
Roadways Department, City Hall.
2.*W. A. BEGG, B.A.Sc., Regina, Sask.
Department of Public Works.
3.*G. G. BELL, 5 Walker St., Portland, Maine.
1. J. C. BOECKH, Toronto, Ont.
With Boeckh Brush Co.
3. W. M. BRISTOL, Halifax, N. S.
Canadian Westinghouse Co.
2. W. C. CAMPBELL, Keene, Ont.
Mining Engineer.
3. W. R. CARSON, Cleveland, O.
Engineering Dept., Grasselli Chemical Co.

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*Diploma with honours.

1905—*Contlnued.*

1. A. V. CHASE,	Orillia, Ont.
3. S. R. A. CLEMENT,	Toronto, Ont.
With Hydro-Electric Power Commission.	
3. T. E. CORRIGAN,	Bodie, Cal.
Chief Electrician, Standard Consolidated Mining Co.	
1.*N. L. R. CROSBY, B.A.Sc.,	Chicago, Ill.
Assistant Contracting Engineer, McClintic-Marshall Const. Co.	
1. G. H. FERGUSON, B.A.Sc.,	Ottawa, Ont.
Assistant Engineer, Commission of Conservation.	
3. H. S. FIERHELLER, B.A.Sc., (deceased.)	
3. F. H. HARRISON,	360 Pearl St., Brooklyn, N.Y.
Assistant to Chief Engineer Brooklyn Edison Co.	
1. M. C. HENDRY, B.A.Sc.,	Toronto, Ont.
2. C. S. L. HERTZBERG,	Walkerville, Ont.
Trussed Concrete Steel Co.	
3.*W. G. HEWSON, B.A.Sc.,	Niagara Falls, Ont.
1. G. S. JONES,	Smith's Falls, Ont.
3.*G. KRIBS,	Portland, Oregon.
Pacific Coast Power and Light Co.	
2. P. A. LAING,	Fanquier, Ont.
Resident Engineer, T.C. Ry.	
1. A. LATORNELL, B.A.Sc.,	Toronto, Ont.
Sewer Department, City Hall.	
3. J. W. LEIGHTON,	Toronto, Ont.
President, Leighton-Jackes Mfg. Co.	
1.*T. R. LOUDON, B.A.Sc.,	Toronto, Ont.
Lecturer in Metallurgy, University of Toronto.	
3. S. E. MCGORMAN,	Walkerville, Ont.
Draftsman, Canadian Bridge Co.	
1.*W. W. MCGREGOR (deceased.)	
2. D. W. MCKENZIE,	Winnipeg, Man.
Draftsman, Engineering Dept., C.N. Ry.	
3.*C. A. MCLEAN,	Toronto, Ont.
Canadian Westinghouse Co.	
2. W. N. MCLEAN,	Erin, Ont.
3. F. G. MACE,	Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.	
3. R. W. MOFFATT, B.A.Sc.,	Toronto, Ont.
Demonstrator in Drawing, University of Toronto.	
3. L. W. MORDEN,	Toronto, Ont.
Canadian Westinghouse Co.	
3. G. R. MUNRO, B.A.Sc.,	405 Dorchester St. W., Montreal, Que.
Assistant to R. S. Lea.	
3.*W. G. NICKLIN, B.A.Sc.,	Grand Rapids, Mich.
Assistant Superintendent, Dalnu & Kiefer Tanning Co.	
1. E. D. O'BRIEN,	Nipigon, Ont.
With Transcontinental Ry.	
1.*B. B. PATTEN, B.A.Sc.,	St. Catharines, Ont.
Rutherford and Patten, Surveyors and Engineers.	
1. E. P. A. PHILLIPS, B.A.Sc., O.L.S.,	Porcupine, Ont.
Pierce & Phillips, Engineers and Surveyors.	
1. W. B. PORTE,	Oakville, Ont.
2. E. F. PULLEN,	Cochrane, Ont.
Resident Engineer, Transcontinental Ry.	

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*Diploma with honours.

1905—*Continued.*

2. G. L. Ramsey, B.A.Sc., Dunnville, Ont.
1. G. W. Rayner, Thorold, Ont.
3.*R. B. Ross, (deceased).
5. T. E. Rothwell, B.A.Sc., Belleville, Ont.
Provincial Assay Office.
2.*G. S. Scott, 26 Howard St., Toronto, Ont.
3. H. V. Serson, Newark, N.J.
Engineer in charge, Titan Steel Co.
3. C. H. Shirriff, B.A.Sc., Toronto, Ont.
Chemist, Imperial Extract Co.
3.*C. E. Sisson, Peterboro', Ont.
Engineering Department, Canadian Gen. Electric Co.
1. D. L. N. Stewart, B.A.Sc., Collingwood, Ont.
1. M. A. Stewart, Toronto, Ont.
Assistant City Engineer, Roadway Dept., City Hall.
3.*W. F. Stubbs, Galt, Ont.
Assistant Engineer, Goldie & McCulloch Co.
1. N. H. Sturdy, Cleveland, Ohio.
Designer, L. S. & M. S. Ry.
1. W. G. Swan, B.A.Sc., Langley, B.C.
Divisional Engineer, C. N. Ry.
1.*F. H. Sykes, O.L.S., D.L.S., Toronto, Ont.
Assistant Structural Engineer, with City Architect, City Hall.
3. L. R. Thomson, B.A.Sc., Winnipeg, Man.
Lecturer in Civil Engineering, University of Manitoba.
3. E. D. Tillson, B.A.Sc., Hotel Albert, New York, N.Y.
1.*J. J. Traill, B.A.Sc., Toronto, Ont.
Lecturer in Mechanical Engineering, University of Toronto.
1.*W. M. Treadgold, B.A., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
3. W. E. Turner, B.A.Sc., Salt Lake City, Utah.
With Utah Light & Ry. Co.
3. A. E. Uren, Toronto, Ont.
Editor, Acton Publishing Co.
3. J. M. Vaughan, 58 Melville Ave., Toronto, Ont.
Contractor.
1. H. L. Wagner, B.A.Sc., Toronto, Ont.
With Canada Foundry Co.
2. W. H. Young, B.A.Sc., D.L.S., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.

1906.

1. F. Alport, Redditt, Man.
3.*W. L. Amos, Guelph, Ont.
1. A. H. Arens, Inverness, N.S.
Resident Engineer, Inverness Ry. & Coal Co.
3.*J. C. Armer, B.A.Sc., Toronto, Ont.
Secretary Treasurer, Commercial Press and Manager of the Canadian Manufacturer Publishing Co., Ltd.
1. M. H. Baker, B.A.Sc., St. Thomas, Ont.
City Engineer.

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*Diploma with honours.

1906—*Continued.*

3. F. W. Baldwin, Hammondsport, N.Y.
With Graham Bell, Esq.
2. E. W. Banting, B.A.Sc., Toronto, Ont.
Demonstrator in Surveying, University of Toronto.
3. F. Barber, B.A., Toronto, Ont.
York County Engineer, 57 Adelaide St. E.
2. M. Bates. B.A.Sc. (deceased.)
2. J. P. Bellisle, (deceased.)
3.*H. H. Betts, B.A.Sc., Rio de Janiero, Brazil.
Rio de Janiero Tramway, Light & Power Co.
5.*D. E. Beynon, B.A.Sc., Toronto, Ont.
With Dunlop Rubber Goods Co.
2. G. W. Bissett, Naughton, Ont.
Mill Supt., Canadian Exploration Co., Ltd.
3. W. C. Blackwood, B.A.Sc., Toronto, Ont.
Demonstrator in Physics, University of Toronto.
3. H. E. Brandon, B.A.Sc., Winnipeg, Man.
Chief Engineer, Vulcan Iron Works.
1. M. E. Brian, B.A.Sc., O.L.S., A.M. Can. Soc. C.E., Windsor, Ont.
City Engineer.
2. F. C. Broadfoot, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.
2. T. W. Brown, B.A.Sc., D. & S.L.S., Saskatoon, Sask.
Civil Engineer.
1.*A. E. K. Bunnell, B.A.Sc., Toronto, Ont.
Engineering Staff, Willis Chipman, C.E.
3. F. M. Byam, Toronto, Ont.
With Smith, Kerry & Chace.
3. A. Cameron, Winnipeg, Man.
With the Vulcan Iron Works.
3. A. W. Campbell, B.A.Sc., Toronto, Ont.
Inspector, Hydro-Electric Power Commission.
1. M. J. Carroll, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
3.*R. E. C. Chadwick, Montreal, Que.
Assistant Engineer. The Foundation Co. of New York.
1.*G. T. Clark, B.A., Saskatoon, Sask.
City Engineer.
3.*G. A. Colhoun, Hamilton, Ont.
Draftsman, The Hamilton Bridge Works Co., Ltd.
1.*W. A. M. Cook, B.A.Sc., Toronto, Ont.
Staff of City Architect, City Hall.
1.*E. L. Cousins, B.A.Sc., Toronto, Ont.
4. A. G. Creighton, Prince Albert, Sask.
Creighton & McConnell, Architects and Structural Engineers.
4. W. N. Daniels, 1215 Filbert St., Philadelphia, Pa.
With John R. Wiggins & Co.
3.*N. P. F. Death, B.A.Sc., 25 Jarvis St. Toronto, Ont.
Death & Watson, Electrical Engineers and Contractors.
3. C. S. Dundass, B.A.Sc., Lachine, Que.
With Dominion Bridge Co.
3. S. L. Fear, Amherstburg, Ont.
With Dunbar, Sullivan Dredging Co.

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*Diploma with honours.

1906—*Continued.*

5.*C. C. FORWARD, Ottawa, Ont.
Laboratory of the Inland Revenue Department.
5. C. W. GRAHAM, B.A.Sc., Toronto, Ont.
Industrial Chemist, Wm. Davies Co.
1.*P. W. GREENE, 161 Admiral Road, Toronto, Ont.
3. C. B. HAMILTON, B.A.Sc., 43 Madison Ave., Toronto, Ont.
Hamilton Gear and Machinery Co.
1.*A. L. HARKNESS, B.A.Sc., Montreal, Que.
St. Lawrence Bridge Co., Ltd.
1.*R. L. HARRISON, Cobourg, Ont.
Resident Engineer, Canadian Northern Ry.
1. E. HARRISON, B.A.Sc., Calgary, Alta.
Harrison & Ponton, Civil and Mining Engineers.
3. J. C. HARTNEY, B.A.Sc., Vancouver, B.C.
Engineer & Salesman, Canadian Westinghouse Co.
1. S. HETT, B.A.Sc., Sutton West, Ont.
Surveyor.
3. C. R. HILLIS, Toronto, Ont.
With Toronto & Niagara Power Co.
3. C. W. HOOKWAY, B.A.Sc., Winnipeg, Man.
Allis-Chalmers Bullock Co.
3. R. H. HOPKINS, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
1.*R. S. HOUSTON, Winnipeg, Man.
With The Vulcan Iron Works.
2.*W. HUBER, 22 Yarmouth Rd., Toronto, Ont.
With Canadian Inspection Co.
3.*A. H. HULL, B.A.Sc., Toronto, Ont.
With Smith, Kerry & Chace.
3. W. C. JEPSON, Niagara Falls, Ont.
Welland Canal Office.
1.*C. JOHNSTON, B.A.Sc., Toronto, Ont.
District Engineer, Canadian Northern Ry.
1. G. R. JONES, B.A.Sc., China.
Missionary.
3. T. JONES, B.A.Sc., 18 Meredith Crescent, Toronto, Ont.
1.*A. E. JUPP, B.A.Sc., 165 Bolton Ave., Toronto, Ont.
3. J. D. KEPPY, Toronto, Ont.
Canadian Inspection Co.
1. J. L. LANG, B.A.Sc., D. & O.L.S., Sault Ste. Marie, Ont.
Lang & Keys, Engineers and Surveyors.
3. A. P. LINTON, B.A.Sc., Montreal, Que.
With St. Lawrence Bridge Co.
4.*A. WELLESLEY MCCONNELL, B.A.Sc., Toronto, Ont
Lecturer in Architecture, University of Toronto.
3.*D. G. MCILWRAITH, Galt, Ont.
Draftsman, The Goldie & McCulloch Co., Ltd.
2. J. A. MCKENZIE, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.
1.*J. V. MCNAB, Moose Jaw, Sask.
Resident Engineer, C.P.R.
3. J. A. MCPHERSON, Toronto, Ont.
Student, Faculty of Medicine, University of Toronto.

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*Diploma with honours.

1906—*Continued.*

2. K. A. MacKenzie, B.A.Sc., Bower Bldg., Vancouver, B.C.
With Natural Resources Security Co., Ltd.
1. W. MacKinnon, Wilkinsburg, Pa.
Erection Dept., McClintic Marshall Construction Co.
3.*W. Maclachlan, B.A.Sc., Belleville, Ont.
Local Manager, Trenton Electric and Water Co.
3.*D. W. Marrs, Pittsburg, Pa.
Designer and Estimator, Riter-Conley Mfg. Co.
3. W. A. Maxwell, Walkerville, Ont.
Draftsman, Canadian Bridge Co.
1.*Rev. J. Mellon Menzies, B.A.Sc., D.L.S., Wu An Hsien, North
Missionary. Honan, China.
3. L. R. Miller, B.A.Sc., Orillia, Ont.
1.*B. F. Mitchell, B.A.Sc., Edmonton, Alta.
Municipal Engineer.
1.F. F. Montague, 506 Union Bank Bldg., Winnipeg, Man.
Law Student.
1.*W. J. Moore, O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.
1. C. R. Murdock, B.A.Sc., Winnipeg, Man.
Resident Engineer, Chipman and Power.
2. C. J. Murphy, B.A.Sc., Fernie, B.C.
Chief Engineer, Crow's Nest Pass Coal Co.
1.*W. P. Near, B.A., B.A.Sc., Toronto, Ont.
Staff of City Engineer.
2. R. Neelands, Port Hammond, B.C.
3. D. G. Park, B.A.Sc., 92 Arlington St., Winnipeg, Man.
Engineer, Waldron Co., Ltd., Heating Engineers.
3. G. W. Paterson, Vancouver, B.C.
Salesman, Canadian Financiers, Ltd.
5. R. E. Pettingill, Port Colborne, Ont.
Chief Chemist, Canada Cement Co.
2.*R. C. Purser, B.A.Sc., Windsor, Ont.
3. N. R. Robertson, B.A.Sc., Walkerton, Ont.
1. J. O. Roddick, B.A.Sc., Toronto, Ont.
Assistant Engineer, Dept. of Public Works of Canada.
1. C. H. Rogers, B.A.Sc., Peterboro', Ont.
Peterboro Canoe Co.
2.*O. Rolfson, B.A.Sc., D.L.S., Box 378, Walkerville, Ont.
Department of the Interior.
1. R. C. Ross, B.A.Sc., Ottawa, Ont.
Department of the Interior.
1. K. G. Ross, Sault Ste. Marie, Ont.
With Lang & Keys, Engineers and Surveyors.
1.*H. T. Routly, O.L.S., D.L.S., Haileybury, Ont.
Routley, Summers & Malcolmson, Engineers and Surveyors.
2. J. H. Ryckman, Chicago, Ill.
Construction Dept., Chicago, Rock Island & Pacific Ry. Co.
3.*W. K. Sanders, 58 Webster St., West Newton, Mass.
1.*W. A. Scott, B.A.Sc., D.L.S., Galt, Ont.
Dominion Land Surveyor.
1.*W. M. Stewart, B.A.Sc., 142 Aberdeen Ave., Hamilton, Ont.
2. J. E. Thomson, B.A.Sc., W. Virginia, U.S.A.
With Sterling Coal Co.

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*Diploma with honours.

1906—*Continued.*

3.*C. L. Vickery, 85 Barlow St., Fall River, Mass.
Chief Engineer, American Thread Co.
5. W. E. Wickett (deceased.)
3.*J. N. Wilson, B.A.Sc., Toronto, Ont.
Electrical Dept., City of Toronto.
3.*E. M. Wood, B.A.Sc., 136 Lee Ave., Toronto, Ont.
Engineering Dept., Canadian General Electric Co., Ltd.

1907.

3.*F. G. Allen, B.A.Sc., Hyde Park, Mass.
Assistant to Chief Engineer, B.F. Sturtevant Co.
1. F. J. Anderson, B.A.Sc., Niagara Falls, Ont.
1. A. P. Augustine, Vancouver, B.C.
B.C. Land Surveyor.
3.*H. D. Bowman, B.A.Sc., 509 Ontario St., London, Ont.
3. W. S. Brady, B.A.Sc., 579 Euclid Ave., Toronto,Ont.
1. G. H. Broughton, Penticton, B.C.
Manager, People's Trust Co.
1. J. A. Brown, B.A.Sc., Porcupine, Ont.
With Routly & Summers.
1. C. E. Bush, B.A.Sc., 156 Geoffrey St., Toronto, Ont.
3. J. H. Caster, Peterboro', Ont.
Production Dept., Canadian General Electric Co.
1.*E. Cavell, Toronto, Ont.
Fellow in Surveying University of Toronto.
1.*C. B. B. Connell, Glasgow, Scotland.
With Mirrless & Watson.
3.*G. C. Cowper, B.A.Sc., Welland, Ont.
2. J. V. Culbert, B.A.Sc., Orillia, Ont.
3.*R. S. Davis, B.A.Sc., Calgary, Alta.
Sales Engineer, Canadian Westinghouse Co.
3. S. D. Evans, B.A.Sc., Leamington, Ont.
3.*F. R. Ewart, B.A.Sc., 44 Sussex Ave., Toronto, Ont.
1. G. R. S. Fleming, Toronto, Ont.
With Atwell Fleming Printing Co.
6. P. C. Fux, B.A.Sc., Brantford, Ont.
With Waterous Engine Works Co.
1. J. S. Galletly, B.A.Sc., Brooklin, Ont.
2. G. Galt, B.A.Sc., East Ely, Nevada.
With Nevada Co.
1. A. B. Garrow, B.A.Sc., Toronto, Ont.
Staff of City Engineer.
1. A. Gillies, B.A.Sc., Minnedosa, Man.
1. G. W. Graham, Eugenia, Ont.
3. C. S. Grasett, B.A.Sc., 8 Harbord St., Toronto, Ont.
1.*R. E. W. Hagarty, B.A.Sc., 662 Euclid Ave., Toronto, Ont.
3. K. Hall, B.A.Sc., 39 Sherman Ave., Hamilton.
1. C. T. Hamilton, B.A.Sc., Niagara Falls, Ont.
With Ontario Power Co.
3. R. A. Hare, St. Catharines, Ont.
With Canadian C;ocker Wheeler Co.
3.*H. O. Hill, B.A.Sc., Pittsburgh, Pa.
With Riter-Conley Mfg. Co.

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*Diploma with honours.

1907—*Continued.*

1.*T. H. Hogg, B.A.Sc., 62 Church St., Toronto, Ont.
Editor, Canadian Engineer.
3.*C. H. Hutton, B.A.Sc., Hamilton, Ont.
Engineering Staff, Dominion Power Co.
1. H. M. Hyland, B.A.Sc., 72 St. Mary St., Toronto, Ont.
3. E. W. Hyman, B.A.Sc., London, Ont.
Assistant Superintendent, London Electric Co.
3.*L. G. Ireland, B.A.Sc., Belleville, Ont.
Supt., Midland Construction Co., Ltd.
1.*W. Jackson, B.A.Sc., Niagara Falls, Ont.
With Ontario Power Co.
4.*C. B. Jackson, Kenilworth, Ill.
Estimating Dept., C. Everett Clark Co.
3.*E. W. Kay, B.A.Sc., Winnipeg, Man.
Salesman, Canadian Westinghouse Co.
3. D. F. Keith, Provo, Utah.
Electrical Engineer, Telluride Power Co.
1. H. P. Keith, Edmonton, Alta.
Smith & Keith, Alta Land Surveyors and Engineers.
1. A. A. Kinghorn, B.A.Sc., Toronto, Ont.
Inspector of Roadways, City Engineers Department.
1. L. W. Klingner, Smith's Falls, Ont.
Resident Engineer, C.P.R.
1.*F. C. Lamb, B.A.Sc., North Battleford, Sask.
Department of Public Works.
3. A. D. LePan, B.A.Sc., Toronto, Ont.
Assistant Superintendent of Buildings and Grounds, University of Toronto.
1. J. H. Lindsay, Hornby, Ont.
3. J. A. D. McCurdy, Hammondsport, N.Y.
With Graham Bell, Esq.
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3.*D. J. McGugan, B.A.Sc., New Westminster, B.C.
With Hill & Burnett.
3. A. H. McIntosh, Chicago, Ill.
With Illinois Steel Co.
3. F. W. McNeill, B.A.Sc., Peterboro', Ont.
Canadian General Electric Co.
1.*M. K. McQuarrie, Revelstoke, B. C.
Resident Engineer, C.P. Ry. Co.
1.*G. MacLeod, Montreal, P.Q.
1. A. G. Mackay, New York, N.Y.
With Hudson & Manhattan Ry. Co.
1. W. S. Malcolmson, B.A.Sc., Haileybury, Ont.
Routly, Summers & Malcolmson, Engineers and Surveyors.
3. S. A. Marshall, Snelgrove, Ont.
6. D. H. C. Mason, B.A.Sc., Toronto, Ont.
Akers, Mason & Bonnington, Chemical Engineers.
1. J. W. Melson, B.A.Sc., Toronto, Ont.
Fellow in Drawing, University of Toronto.
1. G. G. Mills, B.A.Sc., 89 Glen Rd., Toronto, Ont.

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*Diploma with honours.

1907—*Continued.*

3. J. B. MINNS, B.A.Sc., Peterboro', Ont.
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4.*G. N. MOLESWORTH, Toronto, Ont.
Draftsman, Eden Smith & Son, Architects.
1. J. M. MOORE, B.A.Sc., London, Ont.
With McClary Mfg. Co.
5.*P. F. MORLEY, 177 Pearson Ave., Toronto, Ont.
1. E. W. MURRAY, B.A.Sc., Regina, Sask.
Dept. of Public Works.
3. J. D. MURRAY, Toronto, Ont.
With Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. E. W. NEELANDS, B.A.Sc., New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. R. E. K. NEELANDS, B.A.Sc., Brampton, Ont.
2.*B. NEILLY, B.A.Sc., Cobalt, Ont.
Assayer, Black Consolidated.
1. A. E. NOURSE, B.A.Sc., Toronto, Ont.
Fellow in Drawing, University of Toronto.
3. J. J. O'SULLIVAN, Toronto, Ont.
With Canada Railway News Co.
2. T. K. PATON, Wardner, Ida.
Mining Engineer.
1. F. W. PAULIN, O.L.S., Niagara Falls, Ont.
Civil Engineer.
1. R. B. POTTER, B.A.Sc., 235 Garden Ave., Toronto, Ont.
3.*F. E. PORCHNOW, B.A.Sc., Buffalo, N.Y.
With Wilhelm, Parker & Ward, Patent Attorney .
3.*J. F. PROCUNIER, Bayham, Ont.
3. G. E. Quance, B.A.Sc., Delhi, Ont.
Secy.-Treas. of the Delhi Light & Power Co., Ltd.
3.*H. RAINE, Hamilton, Ont.
With Hamilton Bridge Works Co.
1.*J. L. RANNIE, B.A.Sc., Ottawa, Ont.
Observer, Geodetic Survey.
3. C. W. B. RICHARDSON, B.A.Sc., Montreal, Que.
Motive Power Dept., Angus Shops.
1. A. A. RIDLER, Toronto, Ont.
Supt., Constructing & Paving Co., Ltd.
5. H. E. ROTHWELL, Port Richmond, N.Y.
Assistant Chemist, Standard Varnish Works.
5. C. A. SCHOFIELD, Buffalo, N.Y.
Chemist, Schoell-Kopf-Hartford & Hanna Co.
1.*A. C. T. SHEPPARD, Sutton West, Ont.
1. F. R. SMITH, B.A., Gowganda, Ont.
Manager, Can. Gowganda Silver Mines.
3. E. R. SMITHRIM, B.A.Sc., Watrous, Sask.
Supt., Watrous Electric Light, Power and Traction Co., Ltd.
1.*W. SNAITH, Toronto, Ont.
Assistant Engineer, With Frank Barber, York County Engineer.
3. A. C. SPENCER, B.A.Sc., London, Ont.
Mechanical Engineer, McClary Mfg. Co.
3. G. S. STEWART, Toronto, Ont.
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*Diploma with honours.

1907—*Continued.*

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3.*J. L. Stiver, Ottawa, Ont.
Electrical Standard Laboratory, Inland Revenue Department.
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1. G. F. Summers, O.L.S., Haileybury, Ont.
Routly, Summers & Malcolmson, Engineers and Surveyors.
1.*H. W. Sutcliffe, New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. P. M. Thompson, B.A.Sc., Ambridge, Pa.
Draftsman, American Bridge Co.
3. O. R. Thomson, B.A.Sc., Highgate, Ont.
1. L. R. Thomson, B.A.Sc., Winnipeg, Man.
Lecturer in Civil Engineering, University of Manitoba.
1. W. J. Walker, Nipigon, Ont.
With Transcontinental Ry.
1. E. D. Wilkes, B.A.Sc., Toronto, Ont.
Main Drainage Department, City Hall.
3. A. F. Wilson, B.A.Sc., Chicago, Ill.
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3. M. H. Woods, B.A.Sc., Aylmer West, Ont.
1. G. W. A. Wright, 517 Oxford St., London, Ont.
Warren Bituminous Paving Co.
3. J. Young, Toronto, Ont.
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1908.

3. H. G. Akers, B.A.Sc., 448-449 Confederation Life Bldg., Toronto, Ont.
Akers, Mason & Bonnington, Chemical Engineers.
3. L. F. Allan, Toronto, Ont.
Roadway Dept., City Hall.
1.*C. B. Allison, South Woodslee, Ont.
1.*R. M. Anderson, B.A.Sc., Burlington, Ont.
5. J. R. Arens, B.A.Sc., Orillia, Ont.
3. H. C. Barber, B.A.Sc., Toronto, Ont.
Electrical Dept., City Hall.
1. E. Bartlett, B.A.Sc., Smithville, Ont.
Dominion Land Survey Work.
2.F. J. Bedford, Lakefield, Ont.
1.*G. G. Bell, Portland, Me.
With Sawyer & Moulton, Consulting Engineers.
3. G. E. Black, B.A.Sc., Toronto, Ont.
Public Works Department of Ontario.
3. H. F. Bowes, Toronto, Ont.
Superintendent of Warren Bituminous Paving Co., Ltd.
3.*J. H. Brace, Montreal, P.Q.
Traffic Engineer.
1. P. R. Brecken, B.A.Sc., Montreal, Que.
General Secretary Y.M.C.A.
3. E. I. Brown, Paris, Ont.

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*Diploma with Honours.

1908—*Continued.*

1. W. F. M. Bryce, Ottawa, Ont.
Assistant Engineer, City Engineer's Department.

3. P. H. Buchan, B.A.Sc., Vancouver, B.C.
Engineering Department, B.C. Electric Ry. Co., Ltd.

2. J. E. Campbell, B.A.Sc., Coldstream, Ont.

3. N. A. Campbell, Calgary, Alta.
Chief Chemist, Canada Cement Co.

3. A. M. Carroll, Cobalt, Ont.
Manager, Rochester Cobalt Mines, Ltd.

1. H. R. Carscallen, B.A.Sc., Calgary, Alta.
Assistant Hydrographer, with P. M. Sauder.

3. G. Challen, Goderich, Ont.

1. F. H. Chesnut. B.A.Sc., Mount Lebanon, B.C.
Resident Engineer, C,N.R. Plant.

1. W. E. Cole (deceased.)

4.*W. C. Collett, B.A.Sc., Toronto, Ont.
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1. R. Y. Cory, B.A.Sc., 3 Deer Park Crescent, Toronto, Ont.

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Designing Draftsman.

2.*J. D. Cumming, B.A.Sc., Copper Cliff, Ont.

6. A. D. Dahl, B.A.Sc., Midland, Mich.
Chemist, Dow Chemical Co.

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3. J. Darroch, Detroit. Mich.
Draftsman, Autoparts Mfg. Co.

3. H. C. Doorly, St. Catharines, Ont.
Assistant Engineer, Jenckes Machine Co., Ltd.

2. R. H. Douglas, Edmonton, Alta.
Department of Public Works.

2.*F. C. Dyer, B.A.Sc., Toronto, Ont.
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1. F. M. Eagleson, Winchester, Ont.
Engineer and Surveyor.

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With Standard Sanitary Mfg. Co.

1. S. L. Evans, B.A.Sc., Corinth, Ont.

1. E. O. Ewing, Toronto, Ont.
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1. O. L. Flanagan, B.A.Sc., Toronto, Ont.
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1. A. H. Foster, B.A.Sc., Cochrane, Ont.
With T, C. Ry.

3. G. C. Francis, Verschoyle, Ont.

3. S. S. Gear, Fort Erie.

1. C. A. Grassie, B.A.Sc., Welland, Ont.

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3. J. W. Hackner, B.A.Sc., Sandford, Ont.
Inspector of Public Works.

3. F. L. Haviland, Hamilton, Ont.
Draftsman, Hamilton Bridge Works Co.

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*Diploma with honours.

1908—*Continued.*

1.*C. D. Henderson, Walkerville, Ont.
Canadian Bridge Co.
5.*D. J. Huether, B.A.Sc., Plainfield, N.J.
Manager, Century Rubber Trading Co.
1. A. D. Huether, B.A.Sc., 77 Grenville St., Toronto, Ont.
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3. S. B. Iler, Belleville, Ont.
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1.*J. T. Johnston, B.A.Sc., Ottawa, Ont.
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2. H. G. Kennedy, B.A.Sc., 22 Grenville St., Toronto, Ont.
1.*W. R.,Keys, Winchester, Ont.
3.*J. N. M. Leslie, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. F. C. Lewis, Chicago, Ill.
American Bridge Co.
3. H. R. Lynar, Toronto, Ont.
Lynar & Mace, Consulting Engineers.
1.*W. G. McGeorge, Chatham, Ont.
Consulting Engineer.
1. J. M. McGregor, Ridgetown, Ont.
1. L. A. McLean, B.A.Sc., (deceased.)
1. W. A. A. McMaster, Palmerston, Ont.
1. H. C. McMordie, B.A.Sc., Walkerville, Ont.
With Canadian Bridge Co.
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5.*N. G. Madge, New York, N.Y.
Chief Chemist, Continental Rubber Co. of N.Y.
3. J. E. Malone, Toronto, Ont.
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5. K. D. Marlatt, Oakville, Ont.
The Marlatt & Armstrong Co.
1. R. J. Marshall, B.A.Sc., Toronto, Ont.
Demonstrator in Applied Mechanics, University of Toronto.
5. G. L. Milligan, B.A.Sc., Brampton, Ont.
1. A. B. Mitchell, Cambridge, Mass.
Student in Architecture, Harvard University.
4.*J. C. P. Molesworth (deceased.)
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3. W. deC. O'Grady, Winnipeg, Man.
Engineer, Gas Traction Co., Ltd.
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Draughtsman, City Hall.
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*Diploma with honours.

1908—*Continued.*

1. H. G. Phillips, Saskatoon, Sask.
Phillips & Phillips, Civil Engineers and Surveyors.
3. M. Pivnick, B.A.Sc., Toronto, Ont.
Student in Dentistry.
1.*E. M. Proctor, B.A.Sc., Toronto, Ont.
Draftsman, Canada Foundry Co.
3.*C. F. Publow, B.A.Sc., Winnipeg, Man.
With The Vulcan Iron Works.
1. J. T. Ransom, B.A.Sc., Prince Albert, Sask.
1.*W. B. Redfern, B.A.Sc., Dauphin, Man.
1. F. L. Richardson, B.A.Sc., Toronto, Ont.
With Miller, Cummings & Robertson.
3. H. A. Ricker, B.A.Sc., 1 Madison Ave., Hamilton, Ont.
1. A. R. Robertson, B.A.Sc., Toronto, Ont.
Staff of City Engineer.
5. F. A. Robertson, Toronto, Ont.
With Canadian Inspection and Testing Laboratories, Ltd.
1.*W. A. Robinson, Winnipeg, Man.
3. R. C. Robinson, 134 Edmonton St., Winnipeg, Man.
With C. N. Ry.
5. L. J. Rogers, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2.*R. R. Rose, B.A.Sc., Copper Cliff, Ont.
With Canadian Copper Co.
3. D. Ross, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. A. O. Secord, Brantford, Ont.
3. W. E. V. Shaw, B.A.Sc., Toronto, Ont.
Purchasing Engineer, Hydro-Electric Power Commission.
3. H. F. Shearer, B.A.Sc., Toronto, Ont.
With Smith, Kerry & Chace.
1. W. L. Stamford, B.A.Sc., Point du Bois, Man.
Inspector on Concrete Work, Hydro-Electric Power Plant.
3. R. H. Starr, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System, City Hall.
3. A. W. J. Stewart, Toronto, Ont.
Electrical Department, City Hall.
3. J. St. Lawrence, Erie, Pa.
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1. H. B. Stuart, B.A.Sc., Hamilton, Ont.
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Construction Dept., C.P.R.
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*Diploma with honours.

1908—*Continued.*

1. T. L. VILLENEUVE, Chicoutimi, Qu
Assistant Engineer, Dept. of Public Works.
1. J. A. WALKER, B.A.Sc., Nelson, B.C.
With A. L. McCulloch, C.E., B.C.L.S.
3.*B. W. WAUGH, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. R. M. WEDLAKE, B.A.Sc., Brantford, Ont.
With Cockshutt Plow Co., Ltd.
3. R. P. WEIR, Toronto, Ont.
With Toronto Hydro-Electric System.
1. A. M. WEST, B.A.Sc., Vancouver, B.C.
C.N.R. Office.
1. W. R. WHITE, Drayton, Ont.
3. W. J. WHITE, B.A.Sc., Boston, Mass.
Supt. on Construction, General Electric Co.
3.*F. D. WILSON, B.A.Sc., Toronto, Ont.
Structural Engineering Dept., Canada Foundry Co.
1. J. M. WILSON, Toronto, Ont.
City Engineer.
1. D. O. WING, Prince Rupert, B.C.
With G.T.P. Co.
3.*R. YOUNG, Lake Bunstzen, Burrard Inlet, B.C.

1909.

3. E. G. ARENS, Niagara Falls, Ont.
Draftsman with H. D. Symmes, Contractor.
3. H. V. ARMSTRONG, 364 Victoria St., Toronto, Ont.
2.*E. T. AUSTIN, B.A.Sc., Coniston, Ont.
With the Mond Nickel Co.
3. W. H. BARRY, B.A.Sc., Niagara Falls, Ont.
3. R. D. S. BECKSTEDT, B.A.Sc., Wilkinsburg, Pa.
3. R. E. BEITH, Cochrane, Ont.
With Transcontinental Ry.
1.*G. A. BENNETT, B.A.Sc., Calgary, Alta.
Dominion Land Surveyor, Dept. of the Interior.
3. E. R. BIRCHARD, B.A.Sc., Toronto, Ont.
Russell Motor Car Co.
3. W. D. BLACK, B.A.Sc., Montreal, Que.
Supt., Otis-Fensom Elevator Co., Ltd.
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3. G. H. BOWEN, B.A.Sc., Niagara Falls, Ont.
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Canadian Westinghouse Co.
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1. M. G. CAMERON, B.A.Sc., Peterboro', Ont.
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1. V. S. CHESNUT, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

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*Diploma with honours.

1909—*Continued.*

1.*C. G. Cline, B.A.Sc., Kamloops, B.C.
Assistant Engineer, Dept. of the Interior.
1. J. G. Collinson, B.A.Sc., St. Thomas, Ont.
1. G. W. Coltham, B.A.Sc., Aurora, Ont.
3.*H. A. Cooch, B.A.Sc., Toronto, Ont.
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3. W. E. Corman, Stony Creek, Ont.
3. T. H. Crosby, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
3. R. H. Cunningham, Chicago, Ill.
With Bryan-Marsh Co.
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3. C. N. Danks, Sherbrooke, Que.
Draftsman, Canadian Rand Co., Ltd.
1. E. M. Dann, Ottawa, Ont.
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3. H. W. Davis, Kingston, Ont.
With A, Davis & Son, Ltd., Leather Manufacturers.
2.*A. I. Davis, B.A.Sc., 82 Kendal Ave., Toronto, Ont.
1. H. C. Davis, Burlington, Ont.
1. I. H. Dawson, St. Catharines, Ont.
Draftsman.
3. W. H. Delahaye, B.A.Sc., Pembroke, Ont.
3. W. P. Derham, B.A.Sc., Ottawa, Ont.
5.*W. A. Dodds, B.A.Sc., Syracuse, N.Y.
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1. R. H. Douglas, Edmonton, Alta.
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3. T. A. Fargey, B.A.Sc., Newark, N.J.
With General Electric Co.
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With Jones, Stewart & Co.
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Canadian General Electric Co.
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5. A. E. Gooderham, "Deancroft," Toronto, Ont.
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With T.C. Ry.
1. G. E. D. Greene, B.A.Sc. Toronto, Ont.
1. W. H. Greene, Moose Jaw, Sask.
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. C. O. Hay, (deceased.)
3.*J. Hemphill, Sault Ste. Marie, Ont.
Mines Dept., Lake Superior Iron and Steel Co.

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*Diploma with honours.

1909—*Continued.*

1.*G. HOGARTH, Toronto, Ont.
Engineer's Office, Dept. of Public Works of Ontario.
3. A. E. HOLMES, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
3. C. R. HOLMES, B.A.Sc., Detroit, Mich.
With Electric Storage Battery Co.
1. G. C. HOSHAL, B.A.Sc., 210 Beverley St., Toronto, Ont.
3. C. HUGHES, B.A.Sc., 47 Dundonald St., Toronto, Ont.
1. A. E. HUNTER, B.A.Sc., Surveying, Peace River Dist.
3.*H. IRWIN, B.A.Sc., Toronto, Ont.
Secretary, Engineering Society, University of Toronto.
3. J. ISBISTER, B.A.Sc., Victoria Mines, Ont.
With Mond Nickel Co.
3. F. P. JACKES, B.A.Sc., Toronto, Ont.
With Canadian Westinghouse Co.
1.*J. E. JACKSON, Oxford Centre, Ont,
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1. C. E. JOHNSTON, B.A.Sc., 589 Bathurst St., Toronto, Ont.
1. W. J. JOHNSTON, Porcupine, Ont.
1.*A. H. E. KEFFER, North Bay, Ont.
With T. & N.O. Ry.
3. J. B. O. KEMP, B.A.Sc., Toronto, Ont.
Fellow in Drawing, University of Toronto.
3. W. R. KEY, B.A.Sc., Toronto, Ont.
Fellow in Applied Mechanics, University of Toronto.
5. H. N. KLOTZ, B.A.Sc., Toronto, Ont.
Chemist, Gutta Percha & Rubber Co.
3. A. W. LAMONT, B.A.Sc., Winnipeg, Man.
Sales Engineer, Canadian Westinghouse Co., Ltd.
3.*C. B. LANGMUIR, B.A.Sc., Toronto, Ont.
Sales Dept., Factory Products, Ltd.
3. A. E. LENNOX, B.A.Sc., Cleveland, Ohio.
Publicity Engineer, National Electric Lamp Association.
1.*R. W. E. LOUCKS, Delisle, Sask.
Assistant to T. W. Brown, Civil Engineer.
1. N. C. A. LLOYD, Solina, Ont.
3. E. D. MACFARLANE, B.A.Sc., Cleveland, Ohio.
1. J. G. MACKINNON, Toronto, Ont.
Optical Dept., T. Eaton Co.
1. W. A. MACLACHLAN, Guelph, Ont.
3. B. A. MACLEAN, B.A.Sc., Hamilton, Ont.
1. N. W. MACPHERSON, B.A.Sc., St. Thomas, Ont.
*Diploma with honours.
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1. A. S. MCARTHUR, B.A.Sc., 56 Lowther Ave., Toronto, Ont.
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Inspector, Overhead Dept., Toronto Hydro-Electric System.
3.*A. S. MCCORDICK, B.A.Sc., Toronto, Ont.
Electrical Dept., City Hall.
3. P. J. MCCUAIG, B.A.Sc., Milwaukee, Wis.
1. F. H. MCKECHNIE, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

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*Diploma with honours.

1909—*Continued.*

3. W. G. McIntosh, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. G. McLeod, Waupaca, Wis.
Electrician, Electric Light & Ry. Co.
1. V. McMillan, B.A.Sc., 39 Grenville St., Toronto, Ont.
3. N. H. Manning, B.A.Sc., Oshawa, Ont.
1.*A. B. Manson, B.A.Sc., Ruel, Ont.
Resident Engineer, C.N.R.
1. E. S. Martindale, B.A.Sc., Kings Mills, Ont.
1. O. W. Martyn, B.A.Sc., Box 180, Regina, Sask.
2. C. A. Morris, B.A.Sc., Copper Cliff, Ont.
Canadian Copper Co.
3. G. Morton, B.A.Sc., Calgary, Alta.
Canadian Westinghouse Co.
1.*F. V. Munro, B.A.Sc., Chatham, Ont.
1. E. A. Neville, B.A.Sc., Ruthven, Ont.
1. J. Newton, B.A.Sc., Toronto, Ont.
City Engineer's Department.
3.*L. S. Odell, Calgary, Alta.
Carter-Cotton Bldgs.
3. V. J. O'Donnell, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. J. J. O'Hearn, Peterboro', Ont.
Canadian General Electric Co.
1. A. W. Pae, Calgary, Alta.
Davidson & Pae, Real Estate Brokers.
1.*A. M. Petry. B.A.Sc., Toronto, Ont.
Assistant Manager, "Chas. Potter."
1. R. B. Pigott, 157 Wentworth St. S., Hamilton, Ont.
2. G. M. Ponton, Calgary, Alta.
Harrison & Ponton.
3.*C. J. Porter, B.A.Sc., Portland, Oregon.
Draftsman, Mount Hood Ry. & Power Co.
3. A. I. Proctor, King St., E. Hamilton, Ont.
1. J. Quail, 17 Delaware Ave., Toronto, Ont.
1. A. F. Ramsperger, Toronto, Ont.
Draftsman, With Toronto Iron Works, Ltd.
1.*C. R. Redfern, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
3.*L. T. Rutledge, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
1. A. U. Sanderson, B.A.Sc., 10 Oaklands Ave., Toronto, Ont.
3.*R. A. Sara, B.A.Sc., Winnipeg, Man.
Industrial Engineer, City Light and Power Dept.
3.*A. Schlarbaum, B.A.Sc., Galt, Ont.
3.*C. Schwenger, B.A.Sc., Toronto, Ont.
Electrical Department, City Hall.
1. C. A. Scott, Toronto, Ont.
Roadway Department, City Hall.
1. A. Sedgwick, Kaministikuia, Ont.
Engineer, Dog Lake Storage Works.
1. B. H. Segre, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

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*Diploma with honours.

1909—*Continued.*

1. F. V. Seibert, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
5. M. R. Shaw, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. M. W. Sparling, B.A.Sc., Trenton, Ont.
Trenton Electric & Water Co.
3. J. J. Spence, 611 Jarvis St., Toronto. Ont,
1. D. S. Stayner, B.A.Sc., Toronto, Ont.
Bridge Department, City Engineer's Office.
1.*N. C. Stewart, B.A.Sc., Hazelton, B.C.
With Burden & Co.
1.*P. H. Stock, St. Catharines, Ont.
Resident Engineer, N. St. C. & T.R. Ry.
1. J. C. Street, B.A.Sc., 37 Breadalbane St., Toronto, Ont.
3. S. Stroud, B.A.Sc., Toronto, Ont.
With Canadian Westinghouse Co.
1. C. C. Sutherland, B.A.Sc., 446 Heiminck St., Edmonton., Alta
1. R. G. Swan, B.A.Sc., Vancouver, B.C.
B.C. Electric Ry. Co.
1. A. D. Sword, B.A.Sc., 220 Rusholme Rd., Toronto, Ont.
1.*H. W. Tate, B.A.Sc., 224 Wright Ave., Toronto, Ont.
With Chas. E. Goad Co., Civil Engineers.
3.*E. A. Thompson, Lachine Locks, Que.
With Dominion Bridge Co.
1. G. A. Tipper, B.A.Sc., Bickerdake, Alta.
With G. T. P.
3. A. G. Trees, B.A.Sc., 399 Sherbourne St., Toronto, Ont.
3. W. G. Turnbull, B.A.Sc., Milwaukee, Wis.
The Cutler Hammer Mfg. Co.
1. J. E. Underwood, Saskatoon, Sask.
McArthur, Murphy & Underwood.
1. C. P. Van Norman, B.A.Sc., 282 Carlton St., Toronto, Ont.
1. J. Van Nostrand, 97 Delaware Ave., Toronto, Ont.
1. A. Vatcher, B.A.Sc., Freshwater, Bay deVerde, Nfld.
With the Reid Newfoundland Co.
1. C. M. Walker, B.A.Sc., Revelstoke, B.C.
1. E. E. Webb, Toronto, Ont.
Assistant to C. W. Noble, Fireproofing Engineer.
1. C. E. Webb, B.A.Sc., 227 Spadina Rd., Toronto, Ont.
3. F. C. White, B.A.Sc., Lachine Locks, Que.
With Dominion Bridge Co.
3. A. R. Whitelaw, Toronto, Ont.
With Smith, Kerry & Chace.
1. R. G. Wilkinson, Aberarder, Ont.
5.*J. A. McK. Williams, B.A.Sc., Toronto, Ont.
Fellow in Chemistry, University of Toronto.
1.*O. T. G. Williamson, B.A.Sc., 3304 S. Vernon St., Chicago, Ill.
3. L. R. Wilson, B.A.Sc., Montreal, Que.
With St. Lawrence Bridge Co., Ltd.
3. F. F. Wilson, B.A.Sc., Edmonton, Alta.
2. S. A. Wookey, B.A.Sc., Porcupine, Ont.
With Pearl Lake Mine.

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*Diploma with honours.

1910.

2. J. H. Adams, B.A.Sc., 25 Maynard Ave., Toronto, Ont.
3.*O. F. Adams, Toronto, Ont.
Fellow in Electrical Engineering, University of Toronto.
1.*W. G. Amsden, B.A.Sc., 95 Howland Ave., Toronto, Ont.
1. J. A. Baird, B.A.Sc., Leamington, Ont.
With A. Baird, O.L.S., C.E.
1.*W. J. Baird Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. H. A. Barnett, B.A.Sc., 125 Yorkville Ave., Toronto, Ont.
1.*E. W. Berry, Seaforth, Ont.
1. H. C. Bingham, Moose Jaw, Sask.
City Engineer's Department.
2. D. G. Bisset, B.A.Sc., Porcupine, Ont.
Dome Mines.
1. R. H. H. Blackwell, Biscotasing, Ont.
Resident Engineer, C.N.O.
1.*E. P. Bowman, B.A.Sc., West Montrose, Ont.
2. A. F. Brock, B.A.Sc., Copper Cliff, Ont.
With Canadian Copper Co.
3. M. O. Browne, 319 Lippincott St., Toronto, Ont.
3. J. R. Burgess, B.A.Sc., Havelock, Ont.
1. N. G. H. Burnham, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*W. C. Cale, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2.*A. D. Campbell, B.A.Sc., Cobalt, Ont.
With O'Brien Mine.
3. W. M. Carlyle, B.A.Sc., Toronto, Ont.
With Carlyle Construction Co.
3. N. S. Caudwell, 274 Huron St., Toronto, Ont.
3. A. W. Chesnut, B.A.Sc., 71 Walker Ave., Toronto, Ont.
1. D. C. Chisholm, B.A.Sc., Winnipeg, Man.
1. J. A. Claveau, Jonquiere, Que.
Assistant Engineer, Jonquiere Pulp Co.
3. L. S. Cockburn, B.A.Sc., 42 Delaware Ave,, Toronto, Ont.
3. A. G. Code, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. C. R. Cole, Toronto, Ont.
Post-Graduate Course, in Engineering, University of Toronto.
1. G. A. Colquhoun, B.A.Sc., Vankleek Hill, Ont.
4.*J. H. Craig, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*C. D. Dean, B.A.Sc., 14 Wright Ave., Toronto, Ont.
5. A. V. DeLaporte, Toronto, Ont.
Fellow in Chemistry, University of Toronto.
3. R. L. Dobbin, B.A.Sc., Peterboro', Ont.
3.*W. P. Dobson, B.A.Sc., 268 Huron St., Toronto, Ont.
3.*J. M. Duncan, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. V. H. Emery, B.A.Sc., Porcupine, Ont.
Assistant Manager, McIntyre Mines.
3. W. J. Evans, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

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*Diploma with honours.

1910—*Continued.*

3. H. W. Fairlie, Montreal, Que.
Ry. Dept., The Northern Elec. & Mfg. Co.
3.*C. R. Ferguson, B.A.Sc., Brampton, Ont.
3. J. W. Ferguson, B.A.Sc., Lachine Locks, Que.
With Dominion Bridge Co.
4.*J. B. K. Fisken, B.A.Sc., Toronto, Ont.
Fellow in Drawing, University of Toronto.
1. A. W. Fletcher, B.A.Sc., Calgary, Alta.
Department of Public Works.
1.*J. A. Fletcher, Fisher River, Man.
Assistant to E. W. Robinson, D.L.S.
*Diploma with honours.
3. F. T. Fletcher, B.A.Sc., Calgary, Alta.
Dept. of Public Works.
3. T. R. C. Flint, Hamilton, Ont.
With Canadian Westinghouse Co.
3. R. C. Follett.
2. J. M. Foreman, B.A.Sc., Lucan, Ont.
1. W. J. Foster,
3.*W. C. Foulds, B.A.Sc., 70 Spadina Rd., Toronto, Ont.
1. A. Fraser, B.A.Sc., Toronto, Ont.
Fellow in Physics, University of Toronto.
2. J. Fredin, London, Ont.
3. H. Gall, B.A.Sc., 6 Jamieson Ave., Toronto, Ont.
1. M. M. Gibson, B.A.Sc., Willowdale, Ont.
With W. S. Gibson, O.L.S., C.E.
1. J. M. Gibson, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. V. A. E. Goad, B.A.Sc., Toronto, Ont.
Chas. E. Goad Co.
3. V. S. Goodeve, Hamilton, Ont.
With Canadian Westinghouse Co.
2. W. A. Gordon, Sundridge, Ont.
3. V. F. Gourlay, B.A.Sc., Galt, Ont.
3. E. B. Graham, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. R. L. Greene, B.A.Sc., 42 Crescent Rd., Toronto, Ont.
5. J. H. Harris, B.A.Sc., Danforth Ave., Toronto, Ont.
1.*N. J. Harvie, B.A.Sc., Orillia, Ont.
1. J. G. Helliwell, 43 Rosedale Rd., Toronto, Ont.
1. J. F. Henderson, 62 St. Mary St., Toronto, Ont.
3. F. G. Hickling, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2.*P. E. Hopkins, B.A.Sc., Porcupine, Ont.
With Ontario Bureau of Mines.
3.*W. J. Irwin, East Pittsburg, Pa.
Apprenticeship Course, Westinghouse Machine Co.
2. F. L. James, B.A.Sc., Tillsonburg, Ont.
1. H. C. Johnston, 509 Palmerston Ave., Toronto, Ont.
1. R. H. Johnston, B.A.Sc., 716-9th St., Edmonton, Alta.
1. J. C. Keith, B.A.Sc., Calgary, Alta.
2.*J. T. King, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

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*Diploma with honours.

1910—*Continued.*

3. G. A. Kingstone, B.A.Sc., Montreal, Que.
With Montreal Engineering Co.
2. G. L. Kirwin, B.A.Sc., 105 St. Vincent St., Toronto, Ont.
5. P. T. Kirwan, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. S. Knight, B.A.Sc., Bruce Mines, Ont.
3. E. R. Lawler, 205 Beverley St., Toronto, Ont.
3.*C. B. Leaver, B.A.Sc., 459 Bloor St., Toronto, Ont.
3. R. G. Lee, B.A.Sc., Parliament Bldgs., Toronto, Ont.
1. J. N. Leitch (deceased)
1. J. C. Longstaff, 208 Close Ave., Toronto, Ont.
3. J. B. MacDonald, B.A.Sc., Victoria,B.C.
2.*A. D. Macdonald, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. J. A. Macdonald, B.A.Sc., Ridgetown, Ont.
1. G. A. Macdonald, B.A.Sc., Fernie, B.C.
1 A. E. MacGregor, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. E. G. MacKay, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*G. G. MacLennan, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. D. D. MacLeod, B.A.Sc., Calgary, Alta.
Dept. of the Interior.
3. H. G. MacMurchy, B.A.Sc., 60 Alhambra Ave., Toronto, Ont.
3.*H. J. MacTavish, B.A.Sc., 57 Breadalbane St., Toronto, Ont.
4. T. C. McBride, B.A.Sc., 501 Colborne St., London, Ont.
1. S. G. McDougall, B.A.Sc., 287 McLaren St., Ottawa, Ont.
1.*T. A. McElhanney, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*P. J. McGarry, Merriton, Ont.
3.*L. R. McKim, Pittsfield, Mass.
1.*J. McNiven, B.A.Sc., Winnipeg, Man.
Dominion Bridge Co.
3. J. I. McSloy, B.A.Sc., St. Catharines, Ont.
2. A. W. R. Maisonville, Pilettes Corners, Ont.
1.*N. Marr, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*W H. Martin, B.A.Sc., Edmonton, Alta.
2. A. C. Matthews, B.A.Sc., 89 St. George St., Toronto, Ont.
1. C. H. Meader, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*H. O. Merriman, B.A.Sc., Hamilton, Ont.
Draftsman, Smart-Turner Machine Co., Ltd.
1.*D. J. Miller, Red Deer, Alta.
Alberta Central Ry.
1.‡F. S. Milligan, B.A Sc., Toronto, Ont.
Demonstrator in Mechanical Engineering, University of Toronto.
3. P. E. Mills, B.A.Sc , 52 Howland Ave., Toronto, Ont.
3. J. P. Morgan, 211 James St. S., Hamilton, Ont.
1. A. H. Munro, B.A.Sc., 459 Reid St., Peterboro', Ont.
3. J. C. Nash, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

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*Diploma with honours

1910—*Continued.*

1.*V. A. Newhall, B.A.Sc., Calgary, Alta.
Dept. of Interior.
2.*W. E. Newton, B.A.Sc , 76 College St., Toronto, Ont.
1. F. T. Nichol, B.A.Sc., Toronto, Ont.
Assistant Engineer to E. W. Noble, Fireproofing Engineer.
1. C. M. O'Neil, B.A.Sc., Erindale-on-Credit, Ont.
3. C. E. Palmer, B.A.Sc., Richmond Hill, Ont.
3. G. C. Parker., B.A.Sc., Toronto, Ont.
With Smith, Kerry & Chace.
3. K. K. Pearce, B.A.Sc., Port Hope, Ont.
3. C. H Phillips, B.A.Sc., 157 Marguerетta St., Toronto, Ont.
1. D. E. Pye, Cranbrook, B.C.
1. W. S. Ramsay, B.A.Sc., Montreal, Que.
With Dominion Bridge Co.
3. B. J. Redfern (deceased.)
1. H. C. Ritchie, Calgary, Alta.
1. O. W Ross, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. W. F. B. Rubidge, Toronto, Ont.
Fellow in Drawing, University of Toronto.
3. W. C. Shaw, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*W. C. Smith, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. F. L. Smith, Phoenix, B.C.
Assayer B.C. Mining Co.
5. G. E. Smith, Guelph, Ont.
2. R. J. Spry, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. A. L. Steele, B.A.Sc., Toronto, Ont.
Assistant in Mining, University of Toronto.
*Diploma with honours.
2.*H. M. Steven, B.A.Sc., Porcupine, Ont.
With Hollinger Mine.
1.*L. I. Stone, Toronto, Ont.
With G.T. Ry.
3. A. L. Sutherland, B.A.Sc., Peterboro, Ont.
With Canadian General Electric Co.
3. E. A. Ternan, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
5.*W. H. Thom, Toronto, Ont.
Manager, Lyman's Drug & Chemical Co.
3. H. B Thompson, Wellington, Ont.
3. R. M. A. Thompson, B.A.Sc., Strathroy, Ont.
2.*C. G. Titus, Cobalt, Ont.
Engineer, Hudson Bay Mines.
3. K. M. van Allen, B.A.Sc., 60 Bernard Ave., Toronto. Ont.
1. L. T. Venney, B.A.Sc., Brockville, Ont.
1. N. Wagner, 19 Gerrard St., E. Toronto, Ont.
Bridge Dept., Canada Foundry Co.
1. R. M. Walker, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. T. Walton, B.A.Sc., 4 Maryboro Place, London, Ont.
1 G. A. Warrington, B.A.Sc., Cornwall, Ont.

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*Diploma with honours.

1910—*Continued.*

3. M. B. WATSON, B.A.Sc., Dauphin, Man.
Resident Engineer for Chipman and Power.
3.*H. M. WHITE, Lachine Locks, Que.
With Dominion Bridge Co.
1. J. L. WHITSIDE, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
4. W. S. WICKENS, B.A.Sc., Toronto, Ont.
Fellow in Drawing, University of Toronto.
3.*G. K. WILLIAMS, B.A.Sc., 147 Gore Vale Ave., Toronto, Ont.
1.*W. H. WILSON, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. G. E. WOODLEY, 748 Ross Ave., Wilkinsburg, Pa.
Westinghouse Elec. & Mfg. Co.
1. G. R. WORKMAN, Grand Mére, Que.
With the Laurentide Paper Co., Ltd.
3. L. A. WRIGHT, B.A.Sc., 278 Jarvis St., Toronto, Ont.
3.*A. W. YOUELL, B.A.Sc., Toronto, Ont.
Demonstrator in Mechanical Engineering, University of Toronto.
1. W. S. YOUNG, B.A.Sc., Guelph, Ont.

1911.

5.*J. AITKEN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. L. B. ALLAN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. E. G. ARCHER, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. T. H. BARTLEY, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2.*H. L. BATTEN, Aura Lake, Ont.
With Bewick, Moreing & Co., Surveyors.
3.*J. H. Billings Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2.*J. R. BISSETT, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. W. O. BOSWELL, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. F. BOWMAN, Berlin, Ont.
3. T. W. BRACKINREID, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. W. M. BROCK, Toronto, Ont.
Fellow in Drawing, University of Toronto.
1. W. H. D. BROUSE, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. H. BROWN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*E. T. CAIN, Lachine Locks, Que.
With Dominion Bridge Co.
1. C. S. CAMERON, Beaverton, Ont.
1. C. D. CAMPBELL, Calgary, Alta.
6.*W. W. CHADWICK, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

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*Diploma with honours.

1911—*Continued.*

1. R. B. Chandler, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. P. G. Cherry, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. E. F. Chesnut, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. H. J. Clark, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. F. W. Clark, 669 Spadina Ave., Toronto, Ont.
3. F. S. Cleary, 34 Crawford Ave., Windsor, Ont.
2.*D. B. Cole, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*A. S. Cook, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. C. W. Cornell, 17 Charles St., E. Toronto, Ont.
1. M. E. Crouch, Sault Ste. Marie, Ont.
With Lang & Ross.
1. O. F. Cummins, Chepstow, Ont.
3. W. M. Cruthers, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. T. J. Cunerty, 14 D'Arcy St., Toronto, Ont.
1. C. H. Cunningham, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*F. K. D'Alton, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. W. B. Davis, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. F. C. DeGuerre, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*F. H. Downing, Winnipeg, Man.
With Manitoba Bridge & Iron Works.
1. W. B. Dunbar, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
5. C. H. Eckert, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. J. A. Elliot, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. G. R. Elliott, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. C. F. Elliott, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. K. A. Farrell, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. T. J. Farrelly, Alma, Ont.
1. S. E. Flook, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
5. E. L. Frankel, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. E. E. Freeland, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. J. R. Freeman, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
4.*H. P. Frid, 409 Main St., Hamilton, Ont.

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*Diploma with honours.

1911—*Continued.*

3.*R. J. Fuller, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

5.*J. L. Gooderham, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3. R. E. Green, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3. H. G. Hall, Woodstock, Ont.

1. G. M. Hamilton, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

2. F. I. Helson, Newburgh, Ont.
With C.N. Ry.

3. H. R. Hill, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

1. A. J. Huff, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

1. K. Huffman, 30 Cowan Ave., Toronto, Ont.

1. *H. Hyatt, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

1. *R. H. Jarvis, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

1.*L. E. Jones, 417 St. Clarens Ave., Toronto, Ont.

1.*E. A. Kelly, 119 Maryland St., Winnipeg, Man.
Construction Dept., C.P.R.

3.*M. Kirkwood, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

2.*J. Lanning, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

2. M. I. Lieberman, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3. G. L. Lillie, Toronto, Ont.
With Toronto Hydro-Electric System.

6. A. L. Long, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

1.*A. W. P. Lowrie, Toronto, Ont.
Post-Graduate Course in Engineering University of Toronto.

3. W. M. MacAndrew, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3.*R. V. Macaulay, Toronto, Ont.
Post-Graduate-Course in Engineering, University of Toronto.

2.*J. T. MacBain, 15 Hill St., Buffalo, N.Y.

1.*R. E. A. MacBeth, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3.*W. S. MacKenzie, Woodstock, Ont.
With Canadian Linderman Co., Ltd.

1.*J. G. MacLaurin, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

1. J. B. McAndrew, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3.*J. A. McEachren, Strathburn, Ont.

3. R. W. McElroy, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

3. H. J. McEwen, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

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*Diploma with honours.

1911—*Continued.*

3.*W. G. McGHIE, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. D. A. McKENZIE, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. A. G. McLEISH, Nairn Centre, Ont.
With Mond Nickel Co.
1.*R. A. McLELLAN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. *A. A. McQUEEN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
4.*H. H. MADILL, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. J. C. MARTIN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. C. A. MEADOWS, Box 467, Lachine Locks, Que.
With Dominion Bridge Co.
1. *L. G. MILLS, Toronto, Ont
Post-Graduate Course in Engineering, University of Toronto.
5. L. C. MITCHELL, Meaford, Ont.
2. J. A. MORPHY, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. E. H. NIEBEL, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. C. K. NIXON, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. E. S. NOBLE, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. R. K. NORTHEY, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. W. A. O'FLYNN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. W. V. OKE, Toronto, Ont.
Fellow in Surveying, University of Toronto.
2. J. A. ORR, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*J. S. PARKER, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto,
3.*J. H. PARKIN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*J. McD. PATTON, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. C. L. PEARSON, Kananaskis, Alta.
With Calgary Power Co.
2. S. J. PEPLER, Huron St., Toronto, Ont.
3.*W. J. PERRIN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*E. H. PORTE, Aylmer West, Ont.
1.*F. M. PRATT, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto,.
3. H. PULLAN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. L. J. QUINLAN, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

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*Diploma with honours.

1911—*Continued.*

1.*J. E. Ratz, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. F. N. Read, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
4. E. V. Reid, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto,.
1.*W. A. Richardson, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*W. E. Robinson, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. H. L. Roblin, 277 Piccadilly St., London, Ont.
3. L. W. Rothery, E. Liverpool, O.
Supt. of Construction, Tri-State Ry. & Lt. Co.
4.*T. L. F. Rowe, 11½ Melbourne Ave., Toronto, Ont.
3. A. S. Runciman, Calgary, Alta.
With Canadian Westinghouse Co.
3. F. G. Rutley, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. E. M. Salter, Nipigon, Ont.
Draftsman, C.N.O. Ry.
1. F. R. Scandrett, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
5. *J. W. Scott, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. N. D. Seaton, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. N. Sharpe, Winnipeg, Man.
With Allan Findlay, D.L.S., M.L.S.
4.*P. Sheard, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*W. A. Sibbett, Bracebridge, Ont.
2.*C. P. Sills, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*K. H. Smith, Kamloops, B.C.
Dept. of the Interior.
3. M. L. Smith, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*G. E. Squire, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. W. S. Steele, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
5.*A. E. Stewart, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*R. O. Stewart, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3..*R. A. Story, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. C. F. Szammers, 1367 King St., W. Toronto, Ont.
3. R. Taylor, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. J. B. Temple, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. G. C. Thomas, Barrie, Ont.
Assistant Manager, Simcoe Fruits, Ltd.

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*Diploma with honours.

1911—*Continued.*

1.*N. Vickers, Renwick, Ont.
2. J. H. C. Waite, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. G. L. Wallace, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. A. Wardell, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*F. E. Watson, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*P. G. Welford, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. A. G. Wheler, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. G. H. Wilkes, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
5.*E. R. Williams, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*H. A. Wilson, Glenora, Ont.
1.*W. J. T. Wright, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. F. H. Wrong, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. H. K. Wyman, Essex, Ont.
3. L. P. Yorke, Thorold, Ont.
With the Coniagas Silver Reduction Co.
1. S. Young, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*A. Young, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. W. E. Zinkan, Southampton, Ont.

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*Diploma with honours.

CERTIFICATES.

MINERALOGY AND ASSAYING.

1896. G. Johnston.
1897. E. B. Webster.
1901.. G. A. Hunt.

ELECTRICITY.

1896. A. T. Tye, c/o Empresa Hanseatica, Barran quiila, Columbia, South America.
1898. A. N. McMillan, Penetanguishene, Ont.
1900. A. H. Smith,
1896. E. I. Sifton, London, Ont.
Manager. London Electric Construction Co.
1903. W. Elwell (deceased.)

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

A

Acres, H. G.	1903
Adams, J. H	1910
Adams, O. F	1910
Aitken, J	1911
Akers, H. G	1908
Alexander, J. H	1904
Alison, T. H	1892
Alison, J. G. R	1903
Allan, J. R	1892
Allan, J. L	1900
Allan, L. F	1908
Allan, L. B	1911
Allen, F. G	1907
Allison, C. B	1908
Alport, F	1906
Amos, W. L	1906
Amsden W. G	1910
Anderson, A. G	1892
Anderson, F. J	1907
Anderson, R. M	1908
Andrews, E	1897
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Angus, R. W	1894
Apsey, J. F	1888
Archer, E. G	1911
Ardagh, A. G	1893
Ardagh, E. G. R	1900
Arens, A. H	1906
Arens, H. W. (deceased)	1905
Arens, R. J	1908
Arens, E. G	1909
Armer, J. C	1906
Armour, R. H	1905
Armstrong, J	1895
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Augustine, A. P	1907
Austin, E. T	1909
Aylsworth, C. B	1905

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Bain, J. A	1900
Bain, J. W	1896
Baird, J. A	1910
Baird, W. J	1910
Baker, M. H	1906
Baldwin, F. W	1906
Ball, E. F	1888
Ballantyne, H. F	1893
Banting, E. W	1906
Barber, H. G	1902
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Barber, F	1906
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Barnett, H. A	1910
Barrett, R. H. (deceased)	1901
Barrett, J. H	1904
Barry, W. H	1909
Bartlett, E	1908
Bartley, T. H	1911
Bates, M. (deceased)	1906
Batten, H. L	1911
Beatty, H. J	1891
Beatty, W. G	1901
Beatty, J. A	1903
Beauregard, A. T	1894
Beckstedt, R. D. S	1909
Bedford, F. J	1908
Begg, W. A	1905
Beith, R. E	1909
Bell, G. G	1905–1908
Bellisle, J. P. (deceased)	1906
Bennett, G. A	1909
Bergey, A. E	1894
Berry, E. W	1910
Bertram, G. M	1910
Betts, H. H	1906
Beynon, D. E	1906
Billings, J. H	1911
Bingham, H. C	1910
Birchard, E. R	1909
Bissett, D. G	1910
Bissett, G. W	1906
Bissett, J. R	1911
Black, G. E	1908
Black, W. D	1909
Blackwell, R. H. H	1910
Blackwood, A. E	1895

Blackwood, W. C	1906
Blair, W. J	1902
Bleakley, J. F	1885
Blizard, D. C	1909
Boeckh, J. C	1906
Bonnell, M. B	1904
Boswell, E. J	1895
Boswell, M. C	1900
Boswell, W. A	1911
Boulton, W. J	1909
Boustead, W. E. (deceased)	1890
Bow, J. A	1897
Bowen, G. H	1909
Bowers, W. J. (deceased)	1901
Bowes, H. F	1908
Bowman, E. P	1910
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Bowman, H. D	1907
Bowman, F. M	1890
Bowman, A. M	1886
Bowman, F	1911
Boyd, D. G	1894
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Brace, J. H	1908
Brackinreid, T. W	1911
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Brebner, G. (deceased)	1895
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Brian, M. E	1906
Bristol, W. M	1905
Broadfoot, F. C	1906
Brock, A. F	1910
Brock, W. M	1911
Brodie, W. M	1895
Broughton, G. H	1907
Broughton, J. T	1902
Brouse, W. H. D	1911
Brown, J. M	1902
Brown, T. W	1906
Brown, D. B	1888
Brown, G. L	1893
Brown, L. L	1895
Brown, T. D	1904
Brown, J. A	1907
Brown, E. I	1908
Brown, C. E	1909
Brown, H	1911
Browne, E. W	1909
Browne, M. O	1910
Bryce, W. F. M	1908
Buchan, P. H	1908
Buchanan, J. A	1909
Bucke, M. A. (deceased)	1890
Bucke, W. A	1894
Bunnell, A. E. K	1906
Burd, J. H	1903
Burgess, E. L	1903
Burgess, J. R	1910
Burns, D	1883
Burns, J. C. (deceased)	1887
Burns, J. E	1909
Burnham, F. W	1904
Burnham, N. G. H	1910
Burnside, J. T. M	1899
Burwash, L. T	1896
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Cain, E. T	1911
Calder, J. W	1904
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Cameron, C. S	1911
Campbell, A. D	1910
Campbell, A. J	1904
Campbell, A. M	1904
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Campbell, A. R	1902
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Carlyle, W. M	1910
Carmichael, C. G. (deceased)	1902
Carpenter, H. S	1897
Carroll, A. M	1908
Carscallen, H. R	1908
Carson, W. R	1905
Carter, W. E. H	1898
Carroll, M. J	1906
Caster, J. H	1907
Caudwell, N. S	1910
Cavell, E	1907
Chace, W. G	1901

Chadwick, R. E. C	1906
Chadwick, W. W	1911
Challen, G.	1908
Challies, J. B	1904
Chalmers, W. J	1889
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Chandler, R. B	1911
Charlesworth, L. C	1893
Charlton, H. W	1897
Chase, A. V	1905
Cherry, P. G.	1911
Chesnut, A. W	1910
Chesnut, E. F	1911
Chesnut, F. H	1908
Chesnut, V. S	1909
Chewett, H. J	1888
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Chilver, H. L	1904
Chisholm, D. C	1910
Christie, W	1902
Christie, U. W	1904
Christie, A. G	1901
Chubbuck, L. B	1899
Clark, J	1900
Clark, G. T	1906
Clark, F. W	1911
Clark, H. J	1911
Clarke, F. F	1903
Claveau, J. A	1910
Cleary, F. S	1911
Clement, W. A	1889
Clement, S. R. A	1905
Cline, C. G	1909
Clothier, G. A	1899
Coates, P. C	1904
Cockburn, J. R	1901
Cockburn, L. S	1910
Code, A. G	1910
Code, S. B	1904
Code, T. F. (deceased)	1904
Cole, D. B	1911
Cole, W. E. (deceased)	1908
Cole, C. R	1910

Colhoun, G. A	1906
Collett, W. C	1908
Collinson, J. G	1909
Colquhoun, G. A	1910
Coltham, G. W	1909
Conlon, F. T	1902
Connell, C. B. B	1907
Connor, H. V	1902
Connor, A. W	1895
Cooch, H. A	1909
Cook, A. S	1911
Cook, W. A. Mc	1906
Cooper, C	1899
Corman, W. E	1909
Cornell, C. W	1911
Corrigan, G. D. (deceased)	1890
Corrigan, T. E	1905
Cory, R. Y	1908
Coulson, C. L	1903
Cousins, E. L	1906
Coulthard, R. W	1899
Cowan, W. A	1904
Cowper, G. C	1907
Coyne, H	1908
Craig, J. A	1899
Craig, J. H	1910
Craig, S. E	1904
Creighton, A. G	1906
Crerar, S. R	1904
Crosby, N. L. R	1905
Crosby, T. H	1909
Crouch, M. E	1911
Cruthers, W. M	1911
Culbert, M. T. (deceased)	1902
Culbert, J. V	1907
Cumming, R	1902
Cumming, J. D	1908
Cummins, O. F	1911
Cunerty, T. J	1911
Cunningham, C. H	1911
Cunningham, R. H	1909
Currie, W. M	1904

D

Dahl, A. D	1908
Dallyn, F. A	1909
D'Alton, F. K	1911
Daniels, W. N	1906
Danks, F. A	1908
Danks, C. N	1909
Dann, E. M	1909
Darling, E. H	1898
Darroch, J	1908
Davis, R	1907
Davis, A. I	1909
Davis, H. W	1909

Davis, H. C	1909
Davis, W. B	1911
Davison, J. E	1900
Davison, A. E	1903
Dawson, I. H	1909
Deacon, T. R	1891
Dean, C. D	1910
Death, N. P. F	1906
DeCew, J.A	1896
De Guerre, F. C	1911
Delahaye, W. H	1909
De Laporte, A. V	1910

Depew, H. H	1904
Derham, W. P	1909
Dickson, G. W	1900
Dickinson, E. D	1900
Dill, C. W	1891
Dixon, H. A	1900
Dobbin, R. L	1910
Dobson, W. P	1910
Dobie, J. S	1895
Dodds, W. A	1909
Doorly, H. C	1908
Douglas, R. H	1908, 1909
Douglas, W. E	1902
Downing, F. H	1911
Duff, J. A. (deceased)	1890
Duff, W. A	1901
Duggan, G. H	1883
Dunbar, W. B	1911
Duncan, J. M	1910
Dundass, C. S	1906
Dunlop, R. J	1902
Dunn, T. H	1893
Dyer, F. C	1908

E

Eagleson, F. M	1908
Eason, D. E	1901
Eckert, C. H	1911
Edwards, W. M	1902
Edwards, C	1908
Elliot, J. A	1911
Elliott, G. R	1911
Elliott, C. F	1911
Elliott, H. P	1896
Elliott, J. C	1899
Elder, A. J	1904
Elwell, W. (deceased)	1902
Emery, V. H	1910
Empey, J. M	1902
English, A. B. (deceased)	1890
Evans, S. D	1907
Evans, S. L	1908
Evans, W. J	1910
Ewart, J. A	1894
Ewart, F. R	1907
Ewing, E. O	1908

F

Fairbairn, J. M. R	1893
Fairchild, C	1892
Fairlie, H. W	1910
Falconer, F. S	1909
Fargey, T. A	1909
Farrell, K. A	1911
Farrelly, T. J	1911
Fear, S. L	1906
Fensom, C. J	1903
Ferguson, C. R	1910
Ferguson, G. H	1905
Ferguson, J. B	1909
Ferguson, J. W	1910
Fergusson, A. T	1909
Fierheller, H. S. (deceased)	1905
Fingland, W	1893
Fisken, J. B. K	1910
Flanagan, O. L	1908
Fleck, J. G	1904
Fleming, G. R. S	1907
Fletcher, A. W	1910
Fletcher, F. T	1910
Fletcher, J. A	1910
Flint, C	1908
Flint, T. R. C	1910
Flook, S. E	1911
Follett, R. C	1910
Forbes, D. L. H	1902
Ford, A. L	1904
Foreman, J. M	1910
Forrester, C	1893
Forman, W. E	1899
Forward, E. A	1897
Forward, C. C	1906
Foster, A. H	1908
Foster, W. J	1910
Foulds, W. C	1910
Francis, Walter J	1893
Francis, G. C	1908
Frankel, E. L	1911
Fraser, A	1910
Fredin, J	1910
Freeland, E. E	1911
Freeman, T. E	1909
Freeman, J. R	1911
Frid, H. P	1911
Frost, E. R	1909
Fuce, E. O	1903
Fuller, R. J	1911
Fullerton, C. H	1900
Fux, P. C	1907

G

Gaby, F. A	1903
Gagne, S. (deceased)	1901
Gall, H	1910
Galletly, J. S	1907
Galt, G	1907
Gardner, J. C	1903
Garland, N. L	1890
Garrow, A. B	1907
Gear, S. S	1908
George, R. E	1903
Gibbons, J	1888
Gibson, A. E	1902
Gibson, J. M	1910
Gibson, M. M	1910
Gibson, N. R	1901
Gibson, W. S	1904
Gillespie, P	1903
Gillies, A	1907
Glover, A. E	1909
Goad, V. A. E	1910
Goldie, A. R	1893
Goodall, J. N	1904
Gooderham, A. E	1909
Gooderham, J. L	1911
Goodeve, V. S	1910
Goodwin, A. C	1902
Goodwin, J. B	1892
Gordon, J. P	1904
Gordon, W. A	1910
Gourlay, V. F	1910
Gourlay, W. A	1903
Graham, C. W	1906
Graham, E. B	1910
Graham, G. W	1907
Graham, D. A	1909
Grant, W. F	1898
Grant, R. R	1909
Grasett, C. S	1907
Grassie, C. A	1908
Gray, A. T	1897
Gray, W. W	1904
Gray, A	1904
Gray, J. E	1909
Green, R. E	1911
Greene, P. W	1906
Greene, G. E. D	1909
Greene, R. L	1910
Greene, W. H	1909
Greenwood, W. K	1904
Guernsey, F. W	1895
Gulley, C. L	1908
Gunn, W. W	1909
Gurney, W. C	1896
Guest, W. S	1900
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Hackner, J. W	1908
Hagarty, R. E. W	1907
Haight, H. V	1896
Hall, H. G	1911
Hall, K	1907
Hamer, A. T. E	1901
Hamilton, J. F	1903
Hamilton, C. B	1906
Hamilton, C. T	1907
Hamilton, G. M	1911
Hanley, S. C	1893
Hanes, G. S	1903
Hanning, G. F	1889
Hara, L. D	1904
Hare, R. A	1907
Harcourt, F. Y	1903
Hare, W. A	1899
Harkness, A. H	1895
Harkness, A. L	1906
Harper, C. J	1909
Harris, C. J	1904
Harris, J. H	1910
Harrison, R. L	1906
Harrison, F. W	1905
Harrison, E	1906
Hartney, J. C	1906
Harvey, C	1901
Harvey, D. W	1909
Harvie, N. J	1910
Haultain, H. E. T	1889
Haviland, F. L	1908
Hay, C. O	1909
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Hemphill, W	1900
Hemphill, J	1909
Henderson, E. E	1885
Henderson, F. D	1903
Henderson, J. F	1910
Henderson, S. E. M	1900
Henderson, C. D	1908
Hendry, M. C	1905
Henry, J. A	1900
Henwood, C	1902
Herald, W. J	1894
Hermon, E. B	1886
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Hertzberg, C. S. L	1905
Hett, S	1906
Hewson, W. G	1905
Hickling, F. G	1910
Hicks, W. A. B	1897
Hill, E. M. M	1904
Hill, S. N	1904
Hill, H. O	1907
Hill, H. R	1911
Hillis, C. R	1906
Hogarth, G	1909
Hogg, T. H	1907
Holcroft, H. S	1900
Holmes, A. E	1909
Holmes, C. R	1909
Hookway, C. W	1906
Hopkins, P. E	1910
Hopkins, R. H	1906
Horton, J. A	1903
Hoshal, G. C	1909
Houston, R. S	1906
Huber, W	1906
Huether, D. J	1908
Huether, A. D	1908
Huff, A. J	1911
Huffman, K	1911
Hughes, C	1909
Hull, H. S	1895
Hull, A. H	1906
Hunter, A. E	1909
Hunter, A. N	1908
Hutcheon, J	1890
Hutton, C. H	1907
Hyatt, H	1911
Hyland, H. M	1907
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Iler, S. B	1908
Ingles, C. J	1904
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Ireland, L. G	1907
Irvine, J	1889
Irwin, H	1909
Irwin, W. J	1910
Isbister, J	1909

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Jackes, F. P	1909
Jackson, J. G	1903
Jackson, F. C	1901
Jackson, W	1907
Jackson, C. B	1907
Jackson, J. E	1909
James, O. S	1891
James, D. D	1889
James, E. A	1904
James, E. W	1909
James, F. L	1910
Jarvis, R. H	1911
Jepson, W. C	1906
Jeffrey, D	1882
Jermyn, P. V	1904
Job, H. E	1894
Johnson, C. C	1909
Johnston, D. M	1902
Johnston, H	1903
Johnston, H. C	1910
Johnston, A. C	1894
Johnston, S. M	1894
Johnston, H. A	1900
Johnston, J. C	1900
Johnston, J. A	1900
Johnston, C. K	1903
Johnston, R. H	1910
Johnston, W. J	1909
Johnston, C	1906
Johnston, C. E	1909
Johnston, J. T	1908
Jones, J. E	1894
Jones, L. E	1911
Jones, G. S	1905
Jones, G. R	1906
Jones, T	1906
Jupp, A. E	1906

K

Kay, E. W	1907
Keefe, W. S. H	1904
Keele, J	1893
Keffer, A. H. E	1909
Keith, J. C	1910
Keith, D. F	1907
Keith, H. P	1907
Kelly, E. A	1911
Kemp, J. B. O	1909
Kennedy, J. H	1882
Kennedy, H. G	1908
Keppy, J. D	1906
Key, W. R	1909
Keys, W. R	1908

King, C. F	1897
King, J. T	1910
Kinghorn, A. A	1907
Kingstone, G. A	1910
Kirkland, W. C	1884
Kirkwood, M	1911
Kirwan, G. L	1910
Kirwan, P. T	1910
Klingner, L. W	1907
Klotz, H. N	1909
Knight, R. H	1902
Knight, S	1910
Kormann, J. S	1898
Kribs, G	1905

L

Laidlaw, J. T	1893
Laidlaw, A	1901
Laing, W. F. (deceased)	1896
Laing, A. T	1892
Laing, P. A	1905
Laird, R	1886
Lamb, F. C	1907
Lamont, A. W	1909
Lane, A. (deceased)	1891
Lang, A. G	1903
Lang, J. L	1906
Langley, C. E	1892
Langmuir, F. L	1902
Langmuir, C. B	1909
Lanning, J	1911
Larkworthy, W. J. (deceased)	1904
Laschinger, E. J	1892
Lash, F. L	1893
Lash, N. M	1894
Latham, R	1899
Latornell, A. J	1903
Latornell, A	1905
Lavrock, J. E	1898
Lawler, E. R	1910
Lawson, W. L	1892
Lawrie, R. R. (deceased)	1896
Leaver, C. B	1910
Lee, W. A. (deceased)	1892
Lee, R. G	1910
Leighton, J. W	1905
Leitch, J. N. (deceased)	1910
Lennox, A. E	1909
LePan, A. D	1907
Leslie, J. N. M	1908
Lewis, F. C	1908
Lieberman, M	1911
Lillie, G. L	1911
Lindsay, J. H	1907
Linton, A. P	1906
Lloyd, N. C. A	1909
Long, A. L	1911
Longstaff, J. C	1910
Lott, A. E	1887
Loucks, R. W. E	1909
Loudon, T. R	1905
Lowrie, A. W. P	1911
Ludgate, B.A	1885
Lumbers, W. C	1901
Lynar, H. R	1908

Mac

Macallum, A. F	1893
MacAndrew, W. M	1911
Macaulay, R. V	1911
MacBain, J. T	1911
MacBeth, C. (deceased)	1896
MacBeth, R. E. A	1911
Macdonald, A. D	1910
Macdonald, J. B	1910
Macdonald, J. A	1910
Macdonald, G. A	1910
Macdougall, A. C	1901
Macfarlane, E. D	1909
MacGregor, A. E	1910
MacKay, A. G	1907
MacKay, J. T	1902
MacKay, E. G	1910
MacKenzie, K. A	1906
MacKenzie, W. S	1911
Mackinnon, J. G	1909
Mackinnon, W	1906
Mackintosh, D	1898
Maclachlan, W	1906
MacLachlan, W. A	1909
MacLaurin, J. G	1911
Maclean, B. A	1909
MacLennan, G. G	1910
MacLeod, G	1907
MacLeod, D. D	1910
MacMillan, G	1901
MacMurchy, J. A	1896
MacMurchy, H. G	1910
Macpherson, N. W	1909
MacTavish, H. J	1910

Mc

McAllister, J. E	1891
McAllister, A. L	1893
McAlpine, D. D	1909
McAndrew, J. B	1911
McAree, J. (deceased)	1882
McArthur, R. E	1900
McArthur, A. S	1909
McAuslan, H. J	1903
McBride, A. H	1902
McBride, T. C	1910
McCollum, C. R	1909
McConnell, A. W	1906
McCordick, A. S	1909
McCuaig, O. B	1904
McCuaig, P. J	1909
McCulloch, A. L	1887
McCurdy, J. A. D	1907
McDougall, J. (deceased)	1884
McDougall, S. G	1910
McDowall, R	1888
McEachren, J. A	1911
McElhanney, T. A	1910
McElroy, R. W	1911
McEntee, B	1892
McEwen, G. G	1904
McEwen, H. J	1911
McFarlen, G. W	1888
McFarlen, T. J	1893
McFarlane, J. A	1903
McFarlane, W. G	1904
McFarlane, J. B	1907
McGarry, P. J	1910
McGeorge, W. G	1908
McGhie, W. G	1911
McGibbon, C. P	1904
McGorman, S. E	1906
McGowan, J	1895
McGregor, W. W. (deceased)	1905
McGregor, J. M	1908
McGugan, D. J	1907
McIlwraith, D. G	1906
McIntosh, A. H	1907
McIntosh, W. G	1909
McKay, O	1885
McKay, C. (deceased)	1904
McKay, W. N	1895
McKechnie, F. H	1909
McKenzie, D. A	1911
McKenzie, D. W	1905
McKenzie, J. A	1906
McKim, L. R	1910
McKinnon, H. L	1895
McLean, C. A	1905
McLean, W. N	1905
McLean, L. A. (deceased)	1908
McLeish, A. G	1911
McLellan, R. A	1911
McLennan, A. L	1902
McLeod, G	1909
McMaster, A. T. C	1901
McMaster, W. A. A	1908
McMillan, J. G	1900
McMillan, D	1904
McMillan, V	1909
McMordie, H. C	1908
McNab, J. V	1906
McNaughton, A. L	1903
McNaughton, F. W	1898
McNeill, F. W	1907
McNiven, J	1910
McPherson, A. J	1893
McPherson, J. A	1906
McQuarrie, M. K	1907
McQueen, A. A	1911
McRoberts, A. A	1908
McSloy, J. I	1910
McTaggart, A. L	1894
McVean, H. G	1901

M

Mace, F. G	1905
Madden, J. F. S	1902
Madge, N. G	1908
Madill, H. H	1911
Main, W. T	1893
Maisonville, A. W. R	1910
Malcolmson, W. S	1907
Malone, J. E	1908
Manning, N. H	1909
Manson, G. J	1904
Manson, A. B	1909
Marani, C. J	1888
Marani, V. G	1893
Marlatt, K. D	1908
Marr, N	1910
Marriott, F. G	1903
Marrs, C. H	1902
Marrs, D. W	1906
Marshall, R. J	1908
Marshall, S. A	1907
Martin, F	1887
Martin, J. C	1911
Martin, W. H	1910
Martin, T	1896
Martindale, E. S	1909
Martyn, O. W	1909
Mason, D. H. C	1907
Matheson, W. C	1901

Mathison, P.	1901
Matthews, A. C	1910
Maus, C. A.	1903
Maxwell, W. A.	1906
Maynard, H. V.	1907
Meader, C. H.	1910
Meadows, C. A.	1911
Meadows, W. W.	1895
Melson, J. W.	1907
Menzies, J. M.	1906
Mennie, R. S.	1902
Merrill, E. B.	1891
Merriman, H. O.	1910
Middleton, H. T.	1901
Mickle, G. R.	1888
Mill, F. X. (deceased)	1889
Miller, D. J.	1910
Miller, L. Haun	1900
Miller, M. L.	1903
Miller, L. R.	1906
Milligan, G. L.	1908
Milligan, F. S.	1910
Mills, G. G.	1907
Mills, P. E.	1910
Mills, L. G.	1911
Minns, J. B.	1907
Minty, W.	1894
Milne, C. G. (deceased)	1892
Mines, W.	1893
Mitchell, P. H.	1903
Mitchell, L. C.	1911
Mitchell, C. H.	1892
Mitchell, B. F.	1906
Mitchell, A. B.	1908
Moberley, H. K.	1889
Moffatt, R. W.	1905
Molesworth, G. N.	1907
Molesworth, J. C. P. (deceased)	1908
Monds, W.	1899
Monk, E. D.	1908
Moody, F. H.	1908
Montague, F. F.	1906
Montgomery, R. H.	1903
Moore, H. H.	1902
Moore, E. E.	1904
Moore, J. H.	1888
Moore, J. E. A.	1891
Moore, F. A.	1903
Moore, W. J.	1906
Moore, J. M.	1907
Moorhouse, W. N.	1904
Morden, L. W.	1905
Morgan, J. P.	1910
Morice, J. H.	1908
Morley, P. F.	1907
Morphy, J. A.	1911
Morris, J. L.	1881
Morris, C. A.	1909
Morton, G.	1909
Mowbray, F. E. H.	1908
Mullins, E. E.	1903
Munro, A. H.	1910
Munro, W. H.	1904
Munro, G. R.	1905
Munro, F. V.	1909
Murdock, C. R.	1906
Murphy, C. J.	1906
Murray, E. W.	1907
Murray, J. D.	1907
Murray, W. P.	1908

N

Nash, J. C.	1901
Nash, T. S.	1902
Near, W. P.	1906
Neelands, E. V.	1900
Neelands, E. W.	1907
Neelands, R. E. K.	1907
Neelands, R.	1906
Neilly, B.	1907
Neville, E. A.	1909
Nevitt, I. H.	1903
Newhall, V. A.	1910
Newman, W.	1891
Newton, J.	1909
Newton, W. E.	1910
Nichol, F. T.	1910
Nicholson, C. J.	1894
Nicklin, W. G.	1905
Niebel, E. H.	1911
Nixon, C. K.	1911
Noble, E. S.	1911
Northey, R. K.	1911
Nourse, A. E.	1907

O

O'Brien, E. D.	1905
Odell, L. S.	1909
O'Donnell, V. J.	1909
O'Flynn, W. A.	1911
O'Grady, W. deC.	1908
O'Hearn, J. J.	1909
Oke, W. V.	1911
Oliver, E. W.	1903
Oliver, J. P.	1903
O'Neil, C. M.	1910
Orr, J. A.	1911
O'Sullivan, J. J.	1907

P

Pace, J. D	1903
Pace, G	1904
Pae, A. W	1909
Palmer, C. E	1910
Pardoe, W. S	1904
Paris, J	1904
Park, D. G	1906
Parke, J	1904
Parker, G. C	1910
Parker, J. S	1911
Parkin, J. H	1911
Parsons, J. L. R	1901
Paterson, G. W	1906
Paton, T. K	1907
Patten, B. B	1903, 1905
Patton, J. McD	1911
Patterson, J	1899
Paulin, F. W	1907
Peaker, W. J	1904
Pearce, K. K	1910
Pearson, C. L	1911
Peckover, H. J	1908
Pedder, J. R. (deceased)	1890
Pepler, S. J	1911
Pequegnat, M	1908
Perrin, W. J	1911
Petry, A. M	1909
Pettingill, R. E	1906
Philp, D. H	1903
Phillips, E. H	1900
Phillips, H. G	1908
Phillips, C. H	1910
Phillips, E. P. A	1905
Pickering, A. E	1904
Pigott, R. B	1909
Pinhey, C. H	1887
Pinkney, D. H	1903
Pivnick, M	1908
Playfair, N. L	1892
Plunkett, T. H	1903
Ponton, G. M	1909
Pope, A. S. H	1899
Porte, E. H	1911
Porte, W. B	1906
Porter, C. J	1909
Potter, R. B	1907
Powell, G. G	1902
Power, G. H	1901
Prentice, J. M. (deceased)	1892
Price, H. W	1901
Pratt, F. M	1911
Prochnow, F. E	1907
Proctor, A. I	1909
Proctor, E. M	1908
Procunier, J. F	1907
Proudfoot, H. W. (deceased)	1897
Publow, C. F	1908
Pullan, H	1911
Pullen, E. F	1905
Purser, R. C	1906
Pye, D. E	1910

Q

Quail, J	1909
Quance, G. E	1907
Quinlan, L. J	1911

R

Raine, H	1907
Ramsay, W. S	1910
Ramsey, G. L	1905
Ramsperger, A. F	1909
Rannie, J. L	1907
Ransom, J. T	1908
Ratz, J. E	1911
Ratz, W. F. (deceased)	1902
Raymer, A. R	1884
Rayner, G. W	1905
Raymond, D. C	1904
Read, F. N	1911
Redfern, B. J	1910
Redfern, W. B	1908
Redfern, C. R	1909
Reid, E. V	1911
Reid, F. B	1904
Revell, G. E	1899
Richards, E	1899
Richardson, F. L	1908
Richardson, G. H	1888
Richardson, C. W. B	1907
Richardson, W. A	1911
Ricker, H. A	1908
Riddell, M. R	1904
Ridler, A. A	1907
Ritchie, H. C	1910
Roaf, J. R	1900
Robertson, F. A	1908
Robertson, H. D	1902

Robertson, J	1884
Robertson, J. M	1893
Robertson, N. R	1906
Robertson, A. R	1908
Robertson, D. F	1903
Robinson, J. (deceased)	1891
Robinson, F. J	1895
Robinson, A. H. A,	1897
Robinson, W. A	1908
Robinson, R. C	1908
Robinson, W. E	1911
Roblin, H. L	1911
Roddick, J. O	1906
Rogers, J	1887
Rogers, C. H	1906
Rogers, L. J	1908
Rolph, H	1894
Rolfson, O	1906
Rose, K	1888
Rose, R. R	1908
Rosebrugh, T. R	1888
Ross, J. A	1892
Ross, J. E	1888
Ross, D	1908
Ross, R. A	1890
Ross, K. G	1906
Ross, R. B. (deceased)	1905
Ross, R. C	1906
Ross, O. W	1910
Rothery, L. W	1911
Rothwell, T. E	1905
Rothwell, H. E	1907
Rowe, T. L. F	1911
Roxburgh, G. S	1904
Rounthwaite, C. H. E	1900
Routly, H. T	1906
Rubidge, W. F. B	1910
Runciman, A. S	1911
Russell, W. B	1891
Russel, R	1893
Rust, H. P	1901
Rutherford, F. N	1904
Rutledge, L. T	1909
Rutley, F. G	1911
Ryckman, J. H	1906

S

Salter, E. M	1911
Sanders, W. K	1906
Sanderson, A. U	1909
Sara, R. A	1909
Sauer, M. V	1901
Saunders, G. A	1899
Saunders, H. W	1900
Scandrett, F. C	1911
Scheibe, R. R	1896
Scheibe, H. M	1903
Schlarbaum, A	1909
Schofield, C. A	1907
Schwenger, C. E	1909
Scott, C. A	1909
Scott, G. S	1905
Scott, W. A	1906
Scott, W. F	1897
Scott, J. W	1911
Seaton, N. D	1911
Secord, A. O	1908
Sedgwick, A	1909
Segre, B. H	1909
Seibert, F. V	1909
Serson, H. V	1905
Seymour, H. L	1903
Shanks, T	1899
Sharpe, N	1911
Shaw, J. H	1898
Shaw, W. E, V	1908
Shaw, M. R	1909
Shaw, W. C	1910
Sheard, P	1911
Shearer, H. F	1908
Sheply, J. D	1904
Sheppard, A. C. T	1907
Shields, J. D	1894
Shipley, A. E	1898
Shirriff, C. H	1905
Sibbett, W. A	1911
Sills, C. P	1911
Silvester, G. E	1891
Sinclair, D. (deceased)	1902
Sisson, C. E	1905
Slater, F. W	1904
Smallpiece, F. C	1898
Smart, R. S	1904
Smiley, R. W	1897
Smith, A. N	1892
Smith, A	1894
Smith, H. G. (deceased)	1903
Smith, R. W	1898
Smith, J. H	1903
Smith, D. A	1904
Smith, K. H	1911
Smith, M. L	1911
Smith, W. C	1910
Smith, G. E	1910
Smith, F. L	1910
Smith, F. R	1907
Smither, W. J	1904
Smithrim, E. R	1907
Snaith, W	1907

Sparling, M. W	1909
Speller, F. N	1893
Spence, J. J	1909
Spencer, A. C	1907
Spotton, A. K	1894
Spry, R. J	1910
Squire, G. E	1911
Squire, R. H	1893
Stamford, W. L	1908
Starr, R. H	1908
Stayner, D. S	1909
Steele, I. J	1902
Steele, A. L	1910
Steele, W. S	1911
Stern, E. W	1884
Steven, H. M	1910
Stevenson, W. H	1901
Stewart, A. E	1911
Stewart, J. A	1898
Stewart, D. L. N	1905
Stewart, M. A	1905
Stewart, R. O	1911
Stewart, W. M	1906
Stewart, G. S	1907
Stewart, A. W. J	1908
Stewart, N. C	1909
Stiles, J. A	1907
Stiver, J. L	1907
St. Lawrence, J	1908
Stock, J. J	1908
Stock, P. H	1909
Stocking, F. T	1895
Stone, L. I	1910
Story, R. A	1911
Street, J. C	1909
Stroud, S	1909
Stuart, H. B	1908
Stuart, J. L. G	1907-1908
Stubbs, W. F	1905
Stull, W. W	1897
Sturdy, N. H	1905
Summers, G. F	1907
Sutcliffe, H. W	1907
Sutherland, A. L	1910
Sutherland, W. H	1902
Sutherland, C. C	1909
Swan, W. G	1905
Swan, R. G	1909
Sword, A. D	1908-1909
Sykes, F. H	1905
Symmes, H. D	1891
Szammers, C. F	1911

T

Tate, H. W	1909
Taylor, R	1911
Taylor, T	1902
Taylor, W. V	1893
Taylor, A	1900
Taylor, J. W. R	1908
Taylor, W. E	1908
Teasdale, C. M	1902
Temple, J. B	1911
Tennant, D. C	1899
Tennant, W. C. (deceased)	1900
Ternan, E. A	1910
Thom, W. H	1910
Thomas, G. C	1911
Thomas, V. C	1908
Thompson, P. M	1907
Thompson, E. A	1909
Thompson, H. B	1910
Thompson, R. M. A	1910
Thomson, T. K	1886
Thomson, R. W	1892
Thomson, S. E	1904
Thomson, L. R	1905-1907
Thomson, J. E	1906
Thomson, O. R	1907
Thorne, S. M	1900
Thornley, J. H	1908
Thorold, F. W	1900
Tillson, E. D	1905
Tipper, G. A	1909
Titus, C. G	1910
Toms, C. G	1908
Townsend, C. J	1904
Townsend, D. T	1904
Traill, J. J	1905
Treadgold, W. M	1905
Trees, S. L	1903
Trees, A. G	1909
Tremaine, R. C. C. (deceased)	1895
Trimble, A. V	1904
Tucker, B. B	1904
Turnbull, W. G	1909
Turner, W. E	1905
Tye, H. W	1908
Tyrrell, J. W	1883
Tyrrell, H. G	1886

U

Umbach, J. E	1903
Underwood, J. E	1909
Uren, A. E	1905

V

Van Allen, K. M	1910
VanEvery, W. W	1899
VanNorman, C. P	1908-1909
VanNostrand, J	1909
Vatcher, A	1909
Vaughan, J. M	1905
Venney, L. T	1910
Vercoe, H. L	1898
Vickers, N	1911
Vickery, C. L	1906
Villeneuve, T. L	1908

W

Wade, E	1904
Wagner, N	1910
Wagner, W. E	1899
Wagner, H. L	1905
Waite, J. H. C	1911
Waldron, J	1903
Walker, E. W. (deceased)	1904
Walker, R. M	1910
Walker, W. J	1907
Walker, J. A	1908
Walker, C. M	1909
Wallace, G. L	1911
Walton, T	1910
Wanless, A. A	1902
Wardell, A	1911
Warrington, G. A	1910
Wass, S. B	1903
Watson, F. E	1911
Watson, M. B	1910
Watson, R. B	1893
Watson, J. P	1904
Watt, G. H	1899
Waugh, B	1908
Webb, C. E	1909
Webb, E. E	1909
Wedlake, R. M	1908
Weekes, M. B	1897
Weir, H. M	1900
Weir, J. M	1904
Weir, R. P	1908
Weldon, E. A	1897
Welford, P. G	1911
Wells, A. F	1904
West, A. M	1908
Wheler, A. G	1911
Whelihan, J. A	1903
White, A. V	1892
White, H. F	1903
White, W. R	1908
White, W. J	1908
White, F. C	1909
White, H. M	1910
Whitelaw, A. R	1909
Whitside, J. L	1910
Wickens, W. S	1910
Wickett, T	1889
Wickett, W. E. (deceased)	1906
Wiggins, T. H	1890
Wilkes, E. D	1907
Wilkes, G. H	1911
Wilkinson, T. A	1898
Wilkinson, R. G	1909
Williams, C. G	1903
Williams, E. R	1911
Williams, J. A. McK	1909
Williams, G. K	1910
Williamson, O. T. G	1909
Williamson, D. A	1898
Wilson, H. A	1911
Wilson, R. D	1901
Wilson, N. D	1903
Wilson, J. N	1906
Wilson, A. F	1907
Wilson, F. D	1908
Wilson, J. M	1908
Wilson, L. R	1909
Wilson, F. F	1909
Wilson, W. H	1910
Wing, D. O	1908
Withrow, W. J	1890
Withrow, F. D	1900
Wood, E. M	1906
Woodley, G. E	1910
Woods, M. H	1907
Wookey, S. A	1909
Workman, G. R	1910
Worthington, W. R	1904
Wright, C. H. C	1888
Wright, R. T	1894
Wright, W. F	1904
Wright, L. A	1910
Wright, G. W. A	1907
Wright, W. J. T	1911
Wrong, F. H	1911
Wyman, H. K	1911

Y

Yeates, E.	1899
Yorke, L. P.	1911
Youell, A. W.	1910
Young, C. R.	1903
Young, W. S.	1910
Young, W. H.	1905
Young, R.	1908
Young, J.	1907
Young, A.	1911
Young, S.	1911

Z

Zahn, H. J.	1902
Zimmer, A. R.	1907
Zinkan, W. E.	1911

THE

CALENDAR

OF THE

University of Toronto

FACULTY OF
APPLIED SCIENCE AND ENGINEERING

1913-1914

UNIVERSITY PRESS
TORONTO

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1913 CALENDAR 1913

JANUARY					
Sun.		5	12	19	26
Mon.		6	13	20	27
Tues.		7	14	21	28
Wed.	1	8	15	22	29
Thur.	2	9	16	23	30
Fri.	3	10	17	24	31
Sat.	4	11	18	25	..

FEBRUARY					
Sun.		2	9	16	23
Mon.		3	10	17	24
Tues.		4	11	18	25
Wed.		5	12	19	26
Thurs.		6	13	20	27
Fri.		7	14	21	28
Sat.	1	8	15	22	..

MARCH						
Sun.		2	9	16	23	30
Mon.		3	10	17	24	31
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Wed.		5	12	19	26	..
Thur.		6	13	20	27	..
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APRIL					
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Mon.		7	14	21	28
Tues.	1	8	15	22	29
Wed.	2	9	16	23	30
Thur.	3	10	17	24	..
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MAY					
Sun.		4	11	18	25
Mon.		5	12	19	26
Tues.		6	13	20	27
Wed.		7	14	21	28
Thur.	1	8	15	22	29
Fri.	2	9	16	23	30
Sat.	3	10	17	24	31

JUNE					
Sun.	1	8	15	22	29
Mon.	2	9	16	23	30
Tues.	3	10	17	24	..
Wed.	4	11	18	25	..
Thur.	5	12	19	26	..
Fri.	6	13	20	27	..
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JULY					
Sun.		6	13	20	27
Mon.		7	14	21	28
Tues.	1	8	15	22	29
Wed.	2	9	16	23	30
Thur.	3	10	17	24	31
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AUGUST						
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SEPTEMBER					
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Mon.	1	8	15	22	29
Tues.	2	9	16	23	30
Wed.	3	10	17	24	..
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OCTOBER					
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Tues.		7	14	21	28
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NOVEMBER						
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DECEMBER					
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1914 CALENDAR 1914

JANUARY					
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Fri.	4	11	18	25	..
Sat.	5	12	19	26	..

CALENDAR 1913-1914.

1913—Sept. 1 Applications for Registration received.
Last day for receiving applications for Supplemental Examinations.
17 Supplemental Examinations begin.
26 Meeting of Faculty Council.
29 Enrolment.
30 First Term begins.
Last day for receiving Vacation Work.
President's address to students at 3 p.m.
Oct. 1 Meeting of Engineering Society.
3 Meeting of Faculty Council.
15 Meeting of Engineering Society.
29 Meeting of Engineering Society.
Nov. 7 Meeting of Faculty Council.
12 Meeting of Engineering Society.
26 Meeting of Engineering Society.
Dec. 5 Meeting of Faculty Council.
10 Meeting of Engineering Society.
19 First Term ends at 12 noon

1914—Jan. 6 Second Term begins.
Last day for receiving Theses for B.A.Sc.
9 Meeting of Faculty Council.
14 Meeting of Engineering Society.
28 Meeting of Engineering Society.
Feb. 6 Meeting of Faculty Council.
11 Meeting of Engineering Society.
24 Faculty Dinner.
25 Ash Wednesday—Building closed.
Mar. 6 Meeting of Faculty Council.
11 Meeting of Engineering Society.
13 Annual elections of Engineering Society.
25 Annual Meeting of Engineering Society.
April 3 Meeting of Faculty Council.
7 Lectures and practical work close.
10 Good Friday—Building closed.
13 Annual Examinations begin.
May 1 Meeting of Faculty Council.
June 6 Annual Commencement.

The buildings will be closed on all public holidays and daily at noon during July and August.

University of Toronto.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

President	R. A. Falconer, LL.D., D.Litt., C.M.G.
Dean of Faculty	J. Galbraith, M.A., LL.D.
Secretary of Faculty	A. T. Laing, B.A.Sc.
Bursar	F. A. Mouré, Esq.

G. R. Anderson, M.A. *Associate Professor of Physics.*	592 Jarvis St.
R. W. Angus, B.A.Sc., Mem. Am. Soc. M.E. *Professor of Mechanical Engineering.*	42 Howland Ave.
E. G. R. Ardagh, B.A.Sc., *Lecturer in Chemistry.*	Chem. & Mining Bldg.
J. W. Bain, B.A.Sc., *Associate Professor of Applied Chemistry.*	393 Brunswick Ave.
M. C. Boswell, M.A., Ph.D., *Lecturer in Organic Chemistry.*	100 Dewson St.
J. R. Cockburn, B.A.Sc., A.M. Can. Soc. C.E., *Lecturer in Descriptive Geometry.*	100 Walmer Rd.
S. R. Crerar, B.A.Sc., *Lecturer in Surveying.*	122 Grenadier Rd.
W. Hodgson Ellis, M.A., M.B., *Professor of Applied Chemistry.*	74 St. Alban St.
J. Galbraith, M.A., LL.D., *Professor of Engineering.*	Chem. & Mining Bldg.
P. Gillespie, M.Sc., A.M. Can. Soc. C.E., *Associate Professor of Applied Mechanics.*	358 Davenport Rd.
G. A. Guess, M.A., *Professor of Metallurgy.*	Oakville.
H. E. T. Haultain, C.E., M.I.M.M., *Professor of Mining Engineering.*	63 Heath St.
J. McGowan, B.A., B.A.Sc., *Associate Professor of Applied Mechanics.*	Engineering Building.
H. W. Price, B.A.Sc., *Associate Professor of Electrical Engineering.*	474 Palmerston Ave.
T. R. Rosebrugh, M.A., *Professor of Electrical Engineering.*	92 Walmer Rd.
L. B. Stewart, O.L.S., D.T.S., *Professor of Surveying & Geodesy.*	161 Admiral Rd.

J. J. Traill, B.A.Sc., *Lecturer in Hydraulics.*	34 Wolfrey Ave.
W. M. Treadgold, B.A., *Lecturer in Surveying.*	13 Woodlawn Ave. E.
C. H. C. Wright, B.A.Sc., Mem. O.A.A., *Professor of Architecture.*	419 Markham St.

Sessional Appointments.

L. M. Arkley, M.Sc., A.M. Can. Soc. C.E., *Lecturer in Mechanical Engineering.*	61 Indian Road Cres.
L. A. Badgley, B.A.Sc., *Fellow in Surveying.*	1055 Bathurst St.
W. J. Baird, B.A.Sc., *Fellow in Surveying.*	Scarboro.
Miss H. Bamford *Fellow in Chemistry.*	64 St. Alban St.
J. L. Banks, *Instructor in Modelling.*	304 Jarvis St.
E. W. Banting, B.A.Sc., *Lecturer in Surveying.*	330 St. George St.
W. S. Bishop, A.B. (Cornell) *Lecturer in Metallurgical Engineering.*	69 Havelock St.
A. R. Bonham, *Fellow in Chemistry.*	47 Harbord St.
F. W. Bruckmiller, A.B. *Demonstrator in Electrochemistry.*	47 Howland Ave.
J. T. Burt-Gerrans, B.A., *Lecturer in Electrochemistry.*	46 Dewson St.
A. G. Code, B.A.Sc., *Demonstrator in Electrical Engineering.*	333 Davenport Rd.
F. C. Dyer, B.A.Sc., *Demonstrator in Mining Engineering.*	148 John St.
W. S. Ferguson, C.A., *Lecturer in Accountancy.*	52 Tranby Ave.
J. B. K. Fisken, B.A.Sc., *Demonstrator in Drawing.*	60 Madison Ave.
W. S. Guest, B.A.Sc., *Lecturer in Electrical Engineering.*	28 St. Joseph St.
R. H. Hopkins, B.A.Sc., *Demonstrator in Electrical Engineering.*	173 College St.
A. N. Hunter, B.A.Sc., *Demonstrator in Electrical Engineering.*	121 Dovercourt Rd.
H. Hyatt, B.A.Sc., *Fellow in Drawing.*	47 Elm Grove.

M. B. Jackson, 7 Nanton Ave.
Lecturer in Mechanical Engineering.

C. W. Jefferys, A.R.C.A., Mem. O.S.A., York Mills.
Instructor in Freehand Drawing & Water Colour.

S. A. Kennedy, B.A., 289 Huron St.
Assistant in Physics.

J. T. King, B.A.Sc., 346 Woodville Ave.
Assistant in Mining Engineering.

J. T. Lagergren, M.E., 148 Carlton St.
Lecturer in Machine Design.

H. M. Lancaster, B.A.Sc., 22 Palmerston Gardens.
Demonstrator in Chemistry.

J. M. Langstaff, C.A., F.I.A., F.A.S., 666 Bathurst St.
Lecturer in Accountancy.

T. R. Loudon, B.A.Sc., 107 Sheldrake Rd., Eglinton.
Lecturer in Metallurgy.

R. V. Macaulay, B.A.Sc., 11 Barton Ave.
Demonstrator in Electrical Engineering.

J. A. Macdonald, B.A.Sc., 557 Palmerston Ave.
Fellow in Surveying.

A. Wellesley McConnell, B.A.Sc., 35 Chicora Ave.
Lecturer in Architectural Design.

H. H. Madill, B.A.Sc., 23 Grange Rd.
Demonstrator in Drawing.

R. J. Marshall, B.A.Sc., 119 Balmoral Ave.
Demonstrator in Applied Mechanics.

J. W. Melson, B.A.Sc., 239 Beverley St.
Demonstrator in Drawing.

P. W. Mueller, B.A., 96 Warren Rd.
Instructor in German.

J. H. Parkin, B.A.Sc., 35 Wardell St.
Demonstrator in Mechanical Engineering.

M. Pequegnat, B.A.Sc., 38 Kenneth Ave.
Demonstrator in Drawing.

L. J. Rogers, B.A.Sc., 662 Bathurst St.
Demonstrator in Chemistry.

L. T. Rutledge, B.A.Sc., 320 Concord Ave.
Demonstrator in Drawing.

W. J. Smither, B.A.Sc., 64 St. Alban St.
Demonstrator in Drawing.

R. B. Stewart, M.A., 175 McCaul St.
Lecturer in Mining Engineering.

R. Taylor, B.A.Sc., 8 Cross St.
Demonstrator in Electrical Engineering.

G. L. Wallace, B.A.Sc., 58 Parkway Ave.
Demonstrator in Physics.

F. E. Watson, B.A.Sc., 447 Manning Ave.
Demonstrator in Drawing.

W. S. Wickens, B.A.Sc., 89 Kendal Ave.
Fellow in Drawing.

E. R. Williams, B.A.Sc., 43 Kendal Ave.
Fellow in Chemistry.

G. K. Williams, B.A.Sc., 147 Gore Vale Ave.
Demonstrator in Drawing.

G. R. Workman, 121 Essex St.
Fellow in Drawing.

W. J. T. Wright, B.A.Sc., 419 Markham St.
Demonstrator in Drawing.

A. W. Youell, B.A.Sc., 85 St. George St.
Demonstrator in Mechanical Engineering.

A. Young, B.A.Sc., 85 Lappin Ave.
Demonstrator in Applied Mechanics.

C. R. Young, B.A.Sc., A.M. Can. Soc. C.E., 113 Winchester St.
Lecturer in Structural Engineering.

A. R. Zimmer, B.A.Sc., 38 Delaware Ave.
Demonstrator in Electrical Engineering.

MEMBERS OF OTHER FACULTIES GIVING INSTRUCTION TO STUDENTS IN APPLIED SCIENCE.

F. B. Allan, M.A., Ph.D., 380 Brunswick Ave.
Associate Professor of Organic Chemistry.

J. A. Amyot, M.B., 4 Laburnum Ave.
Professor of Hygiene.

Alfred Baker, M.A., 81 Madison Ave.
Professor of Mathematics.

B. A. Bensley, B.A., Ph.D., 316 Brunswick Ave.
Associate Professor of Zoology.

C. A. Chant, M.A., Ph.D., 201 Madison Ave.
Associate Professor of Astro-Physics.

A. P. Coleman, M.A., Ph.D., 476 Huron St.
Professor of Geology.

A. T. DeLury, M.A., University of Toronto.
Professor of Mathematics.

J. H. Faull, B.A., Ph.D., 102 Yorkville Ave.
Associate Professor of Botany.

A. G. Huntsman, B.A., M.B., 210 Fern Ave.
Lecturer in Biology.

W. J. Loudon, B.A., 133 Walmer Rd.
Professor of Mechanics.

M. A. Mackenzie, M.A., Ph.D., 1 Bellwoods Park.
Associate Professor of Mathematics.

W. L. Miller, B.A., Ph.D., *Professor of Physical Chemistry.*	50 St. Alban St.
W. A. Parks, B.A., Ph.D., *Associate Professor of Geology.*	69 Albany Ave.
A. L. Parsons, B.A., *Lecturer in Mineralogy.*	384 Brunswick Ave.
T. L. Walker, M.A., Ph.D., *Professor of Mineralogy and Petrography.*	62 Maple Ave.
E. M. Walker, B.A., M.B., *Lecturer in Zoology.*	67 Alcina Ave.

Sessional Appointments.

P. Balbaud, B. ès L., *Lecturer in French.*	626 Huron St.
S. Beatty, M.A., *Lecturer in Mathematics.*	22 Alvin Ave.
E. A. Hodgson, B.A., *Fellow in Mathematics.*	61 Huntley St.
A. Maclean, B.A., *Lecturer in Geology.*	102 College St.
I. R. Pounder, B.A., *Fellow in Mathematics.*	614 Bathurst St.
J. E. Thomson, B.A.Sc., *Demonstrator in Mineralogy.*	57 Queen's Park.
W. H. Wylie, B.A.Sc., *Fellow in Mineralogy.*	35 North St.
E. J. Whittaker, B.A., *Fellow in Geology.*	249 McCaul St.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

Historical Sketch.

The Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practical Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February, 1877.

By the scheme thus approved of, Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1889 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By the terms of this order the management and discipline of the School was vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degrees in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal, the Professors and Lecturers, together with the Registrar.

By the University Act, 1906, the School of Practical Science was united to the University of Toronto as its Faculty of Applied Science and Engineering.

GRADUATING DEPARTMENTS.

There are eight regular Departments of Instruction leading to the degree of Bachelor of Applied Science:—

1. Civil Engineering.
2. Mining Engineering.
3. Mechanical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.
7. Electrical Engineering.
8. Metallurgical Engineering.

The instruction given in these departments extends over a period of four years and is designed to give the student a thorough knowledge of the scientific principles underlying the practice in the several professions, and also such training as may make him immediately useful when he commences professional work.

DEGREE OF MASTER OF APPLIED SCIENCE (M.A.Sc.).

Graduates holding the degree B.A.Sc. may, on an additional year's attendance as a student, proceed to the degree M.A.Sc. (See page 75.)

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem. E.), as the case may be, subject to the rules and regulations established by the University. (See page 75.)

FELLOWSHIPS.

Fellowships of the value of $500 each, open to graduates, are offered annually in the various departments.

Applications for these fellowships are to be made annually in writing to the Secretary of the Faculty on or before the 1st day of May.

SCHOLARSHIP.

The Boiler Inspection and Insurance Company of Canada offers a Scholarship in the Department of Mechanical Engineering of the value of $130.00 to the student who obtains highest Honour Standing in the regular examinations of the third year.

The successful candidate will be expected to proceed to his fourth year during the session next following the date of the award.

The amount of the award will be credited by the Bursar to the fees of the fourth year of the successful candidate.

Research Fellowship.

Two research Fellowships of the value of $500 each are offered annually by the Alumni Association of the Faculty of Applied Science and Engineering.

I. MATRICULATION.

1. The matriculation requirements of this Faculty are based upon those given in the curriculum for Junior Matriculation, a copy of which may be obtained on application.

2. A candidate for matriculation must produce satisfactory certificates of good character.

3. The subjects are as follows:

English, History, any three of the following, viz., Greek, Latin, French, German, Experimental Science, with pass standing in Honour Mathematics.

In selecting the options it is recommended that students take French, German and Experimental Science. In the department of Architecture French is required, in Applied Chemistry and Chemical Engineering German is required, and in Mechanical Engineering it is desirable that students take German.

4. The pass standard is forty per cent. of the marks assigned to a paper, with an average of sixty per cent.

5. A candidate who has obtained an average of sixty per cent. on all the papers but has failed to obtain forty per cent. in not more than two papers may complete matriculation by passing on these papers at any one subsequent examination.

6. A candidate who has obtained forty per cent. on each of at least eight papers, with an average of sixty per cent. on the same, will be credited with these papers. In order to complete his Matriculation, he must obtain at one subsequent examination, forty per cent. on each of the remaining papers, with an average of sixty per cent.

7. The examination for pass and honour Junior Matriculation is held annually in June at centres in Ontario, and, if application is made to the Senate, the examination may, with the co-operation of the Department of Education, be held at centres outside Ontario.

8. Applications accompanied by the fee of $5.00 must be sent not later than the 15th of May to the local Public School Inspector, or in the case of candidates intending to write at the University, to the Registrar.

9. A Junior Matriculation examination, at which no honour papers are set, will be held in September at the University and at such other centres as may from time to time be authorized. Candidates entitled to the privileges of supplemental examinations as well as new candidates, may present themselves at this examination.

10. Applications to write on the September examination, together with the necessary fee, must be received at the Department of Education not

NOTE.—Received too late for incorporation in the Calendar.—A. T. L., *Sec.*

8. DEPARTMENT OF METALLURGICAL ENGINEERING.

The object of this four year course is to provide instruction and preliminary training for those who intend to become metallurgical engineers. Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months experience in metallurgical work.

SUBJECTS OF INSTRUCTION.

First Year.

		Hours per Week.			
Subject.	No.	First Term.		Second Term.	
		Lect.	Lab'y	Lect.	Lab'y
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Inorganic Chemistry	75–77	3		3	
Chemistry	78		9		9
Accounts	65	1		1	
Mineralogy		1	1	1	1
Drawing	120		10		10

Second Year.

Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Hydrostatics	196			1	2
Electricity	140			1	
Steam Engines	38	1			
Magnetism and Electricity	135	2	3		
Inorganic Chemistry	79–80–85			2	
Banking and Finance	66	1		1	
Chemical Laboratory			6		6
Mineralogy			1		1
Mining	170	1		1	2
Metallurgy		1		2	2
Heat	198	1	2		
Spanish		1		1	
Drawing			7		7

(OVER)

Third Year.

		Hours per Week.			
Subject.	No.	First Term.		Second Term.	
		Lect.	Lab'y	Lect.	Lab'y
Theory of Mechanism	25	2		2	
Hydraulics	29–30	2	3	2	
Theory of Construction	19	2			
Limited Companies	67	1		1	
Physical Chemistry	90	2	5	2	5
Electrochemistry	101	2	3		
Ferro-Metallurgy	181	1		1	
Cement and Concrete	21	1		1	
Assaying		1	3	1	5
Metallurgy		1	4	4	4
Ore Dressing		1		1	3
Drawing					3

Fourth Year.

Thermodynamics	34	1		1	3
Heat Engines	39	1		1	
Ore Dressing		2	2	2	4
Assaying			4		
Costs		1		1	
Plant Design		1	4	1	4
Power	141		3		3
Metallurgy		2	9	2	9
Thesis			4		4

later than September 1, for those who wish to write at any centre established in Ontario, and not later than August 1 for any centre elsewhere in Canada.

11. Forms of application, the time-table of the September examination, and further particulars may be had upon application to the Department of Education.

II. ADMISSION.

A candidate for admission must have completed the seventeenth year of his age on or before the first of October of the year in which he seeks to enter.

Applications for admission must be made on blank forms supplied by the Registrar, and should be forwarded early in September.

Applications will be considered from (*a*) those who have completed matriculation, including those who hold certificates recognized as equivalent —see matriculation curriculum—, (*b*) those who have failed in not more than two papers of the matriculation examination. The latter must complete matricluation before being eligible to enter the second year.

Applications based upon other certificates than those mentioned will be considered as occasion may require. Such certificates must be accompanied by an official statement of the marks in the various subjects upon which the certificate was granted.

ADMISSION AD EUNDEM STATUM.

An undergraduate of another University may be admitted *ad eundem statum* on such conditions as the Senate on the recommendation of the Council of the Faculty may prescribe.

An applicant for admission *ad eundem statum* must submit with his petition (1) a calendar of his University giving a full statement of the courses of instruction; (2) an official certificate of character and academic standing.

III. REGISTRATION.

Registration in the various years will begin Sept. 1st. Blank cards for the purpose will be supplied by the Secretary on request.

IV. FEES.

All fees are payable at the Bursar's office between the hours 10 a.m. and 1 p.m. of each week day except Saturday.

The annual fees including tuition, library, laboratory supplies and one annual examination shall be as follows:—

First Year.

If paid in full on or before November 5th	$100.00
By instalments:	
First instalment, if paid on or before November 5th	50.00
Second instalment, if paid on or before February 5th	55.00

Second Year.

If paid in full on or before November 5th	$110.00
By instalments:	
First instalment, if paid on or before November 5th	55.00
Second instalment, if paid on or before February 5th	60.00

Third and Fourth Years.

If paid in full on or before November 5th	$120.00
By instalments:	
First instalment, if paid on or before November 5th	60.00
Second instalment, if paid on or before February 5th	65.00

Repeating the Year.

If paid in full on or before November 5th	50.00

The above fees are payable in advance. After November 5th a penalty of $1.00 per month will be imposed until the whole amount is paid. In the case of payment by instalments the same rule as to penalty will apply.

Students desiring to pay in instalments must have paid the fees due in the first term before proceeding to the work of the second term.

General Fees.

Matriculation, or registration of Matriculation	$5.00
Supplemental examination	10.00
Admission ad eundem statum	10.00
Degree of B.A.Sc. (Payable not later than April 1st)	10.00

Dues and Deposits.

(Payable to the Secretary of the Faculty at the time of registration.)

Engineering Society membership	$1.00
Annual deposit	2.00

Charges for waste, neglect and breakage are to be met out of the deposit fee, the balance of which will be refunded to the student at the end of the session.

GENERAL INFORMATION FOR STUDENTS.

The Council of University College, and the governing bodies of the federated universities and colleges, respectively, have disciplinary jurisdiction over and entire responsibility for the conduct of their students in respect of all matters arising or occurring in or upon their respective college buildings and grounds, including residences.

The councils of such of the faculties as have assigned for their separate use any building or buildings and grounds, including residences, have disciplinary jurisdiction over and entire responsibility for the conduct of all students in their respective faculties in respect of all matters arising or occurring in or upon such building, or building and grounds.

In all such cases, and, save as aforesaid, as respects all students to whatsoever college or faculty they may belong, disciplinary jurisdiction is vested in the Caput, but the Caput may delegate its authority in any particular case or by any general regulation to the council or other governing body of the university or college or faculty to which the student belongs.

The Caput has also power and authority to determine by general regulations, or otherwise, to what college, faculty or other body the control of university associations belongs.

If there be any question as to the proper body to exercise jurisdiction in any matter of discipline which may arise, the same shall be determined by the Caput, whose decision shall be final.

Disciplinary jurisdiction includes the power to impose fines.

REGULATIONS RESPECTING STUDENTS.

No student will be enrolled in any year, or be allowed to continue in attendance, whose presence for any cause is deemed by the Council to be prejudicial to the interests of the University.

All interference on the part of any student with the personal liberty of another, by arresting him, or summoning him to appear before any tribunal of students, or otherwise subjecting him to any indignity or personal violence, is forbidden by the Council. In particular, students of all Faculties are warned against the practices known as the "hustling" of freshmen and against inter-year or inter-faculty "hustles". Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

Any student who may be convicted of having taken part in processions through the city, which have not been authorized by the police authorities after application by the Executive of the Students' Parliament, will be severely disciplined.

All students shall be in attendance during the whole of each term. Those whose attendance or work is reported as unsatisfactory are liable to dismissal by the Council.

No student will be allowed to repeat the work of any year more than once.

Information as to the text books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

OPTIONS.

In departments 1, 2, 3 and 7 of the first and second years, students have the option of taking either French or German. The selection made for the first year must be continued during the second year.

In department 1 of the third year, in addition to the regular subjects, Biology will be required of those who intend to follow Sanitary work in the fourth year.

In department 5, second year, an option is permitted between Biology and Calculus as the student, upon consultation with the head of the department in Chemistry, may decide.

In the fourth year, optional courses are arranged in certain departments. Students are required to submit their selection to the Secretary in writing, not later than September 15th. The proposed selection must be approved by Council before adoption.

REGULATIONS RESPECTING EXAMINATIONS.

Regular Examinations.

A student who in either term of the session fails to perform the work of his course in a manner satisfactory to the professors in charge, will not be allowed to present himself at the final examinations of the year.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the annual examinations in April, notice in writing of their intention to take such examinations. A penalty of $1.00 will be imposed upon all candidates who fail to give notice within the proper time.

In the second, third and fourth years annual examinations will be held at the beginning of the second term on all subjects completed during the first term.

No student will be allowed to write at the annual examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examination will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and on -half times the minimum required in the case of a written examination.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, electrical design, optics, surveying and architecture, the drawings set in these subjects must be made.

Candidates who fail in passing the annual examinations will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

Term Examinations.

In the first year only, term examinations in four subjects will be held on the last two days of the first term.

The subjects will not be announced until the day previous to the first examination.

The results of these examinations will be incorporated with those of the annual examinations in the same subjects in the ratio of 1 to 2.

Supplemental Examinations.

A candidate who fails in one or two subjects at the Annual Examinations, will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 17th of September, 1913. Candidates are required to send to the Secretary of the Faculty not later than the first of September, notice in writing of their intention to take such examinations, and to remit to the Bursar the fee of $10.00.

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

Vacation Work.

Vacation work must be handed in on or before the first day of the session.

Vacation notes must be on construction only, except in Department 2 (see p. 75), and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be free-hand pencil drawings with figured dimensions.

Notes must be made in standard note books approved of by the Faculty. Notes which have been taken during the session in connection with the work in drawing will not count as vacation work.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

Shop Work.

Students in Mechanical and Electrical Engineering are not considered as having completed their course of study, nor are Degrees granted, until certificates have been submitted to the Council, and accepted as satisfactory, showing not less than eight months of mechanical experience in production of some kind under commercial conditions. Preferably the work undertaken should be in one of the manufacturing industries or trades with which the Course is related.

It is not desirable that any student in these Courses should enter sales or other non-production departments of the engineering industries without having acquired some personal experience in mechanical production. It is best to obtain this experience under commercial conditions. Otherwise one can not at all appreciate shop conditions and limitations.

Honours.

Honours will be granted in each department to the students who pass in all the subjects and obtain at least 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Papers read before the Engineering Society may be considered in granting Honours.

REGULATIONS RESPECTING TERM WORK.

Students working in any laboratory must be governed by the regulations relating thereto as made known from time to time.

No laboratory reports or drawings may be removed from the laboratories without permission. The Council reserves the right to dispose of them as may be thought proper.

Field Work.

No field notes will be counted which have not been taken in the field, and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

Drafting Rooms.

Drawings prescribed for the first term of the session will not be counted unless finished in that term.

The minimum number of drawings in first and second years shall be twenty-five, and the maximum number thirty-five, except in the Department of Analytical and Applied Chemistry, in which the number shall be fifteen and twenty-five respectively.

No drawings will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

Theses.

In the Fourth Year each student is required to prepare a thesis on a subject approved by the Council. The title of the thesis must be sent to the Secretary of the Faculty for approval on or before November 1st, and the completed thesis must be handed in not later than the first day of the second term and shall become the property of the University. The rules governing size, form, etc., may be obtained on application to the Secretary.

EXEMPTIONS.

Applications for exemption from any of the regulations must be made to the Council in writing and the particulars of the case fully stated.

1. DEPARTMENT OF CIVIL ENGINEERING.

The courses of study in Civil Engineering are designed to give the student a sound training in the fundamental scientific principles on which the practice of the profession is based. The instruction is given by means of lectures and practical work in the field, the drafting room and the laboratory. In this way the student is led to apply the principles developed in the class room.

Formerly the term Civil Engineering included all the branches of the profession, but some of these became so extensive as to require distinctive names and fields of work for themselves. Even yet Civil Engineering is so comprehensive as to render it impossible for any one to master all its branches. It may be said to include surveying and topography; works connected with transportation, such as railroads and canals; municipal works, such as waterworks, sewers, streets and pavements; hydraulic works, such as power development, drainage, irrigation, etc.; structural works, such as bridges, roofs, etc.

Notwithstanding the variety of the branches of Civil Engineering above enumerated, they are underlaid by a comparatively compact body of scientific principles which form the basis of the work of instruction. While the subjects of the first year are largely fundamental, an effort is made to give a professional aspect to the student's work from the very beginning. This is accomplished by the introduction of such subjects as field work and plotting in the curriculum of the first year. In the second and third years the study of fundamental science is continued, together with its application to the solution of engineering problems. In the fourth year the student may elect to follow certain optional subjects which form a continuation of the work of the previous years. Here special stress is laid upon experimental work in the laboratory.

SUBJECTS OF INSTRUCTION.

Civil Engineering—First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Surveying	205, 206	1	9	1	
Statics	10	2		2	
Dynamics	11	2		2	
Elementary Chemistry	75	2		2	
Modern Language	217, 218	1		1	
Accounts	65	1		1	
Drawing	117		13		22

Second Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Vacation Work	220				
Calculus	190	2		2	
Spherical Trigonometry	191	1			
Elementary Astronomy	55	1		1	
Descriptive Geometry	121	1		1	
Surveying	207, 208	1	9	1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Mineralogy	159, 161	2	1		2
Banking and Finance	66	1		1	
Modern Language	217, 218	1		1	
Drawing	123		12		16
Chemical Laboratory	81				6

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Least Squares	192			1	
Practical Astronomy and Geodesy	56, 57	2		2	
Surveying and Levelling	209, 210	1	9	1	
Descriptive Geometry	127	1			
Hydraulics	29, 30	2		2	3
Photography	199	1	1½		1½
Ferro-Metallurgy	181	1		1	
Theory of Structures	18	2		2	
Cements and Concrete	21			1	
Engineering Chemistry	94	1		1	
Geology	150	1		1	
Limited Companies	67	1		1	
Heat	198	1	1½		
Biology*	61	2		2	
Strength of Materials	14				1
Drawing	128		8		19

Fourth Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Foundations†	20	1	1	1	1
Electricity	140	1		1	
Thermodynamics†	34, 39*a*	1	1	1	1
Geology	151	1		1	
Contracts and Specifications	68			1	
Thesis	219				
And one of					
(*a*) Astronomy	58, 59	2	23	2	
Geodesy	60	2		2	23
(*b*) Sanitary Engineering	213	1½	16	1½	16
Highway Engineering	214	1½	6	1½	6
(*c*) Structural Engineering	215	6	22	7	22
or two of					
(*d*) Hydraulics	31, 32	3	10	3	10
(*e*) Strength and Elasticity of Materials	16, 17, 22, 23	3½	11	3½	11
(*f*) Railway Engineering	211, 212	1½	11	1½	11

* Required only of those who propose to take Sanitary Engineering in the Fourth Year.

† Not required of those taking the Astronomy option.

2. DEPARTMENT OF MINING ENGINEERING.

The course in Mining Engineering is intended to serve as a preliminary training for those who expect to practise the art of mining or metallurgy. In the first two years it differs very little from the course in civil engineering, in the third year some subjects peculiar to mining and metallurgy are taken up.

In general this course is designed to first give the student a good training in the parts of engineering essential to all branches, such as surveying, drafting, etc., and then in the upper years to allow him to follow studies peculiar to mining engineering.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least six months' practical experience in work connected with mining, metallurgy or geology, for which they must have received regular wages. Certificate forms, giving full details as to acceptable classes of work, will be furnished on application, and should be obtained by all students before entering employment.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Surveying	205, 206	1	9	1	
Statics	10	2		2	
Dynamics	11	2		2	
Elementary Chemistry	75	2		2	
Modern Languages	217, 218	1		1	
Accounts	65	1		1	
Drawing	117		13		19
Chemical Laboratory	76				3

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Surveying	207, 208	1	9	1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Optics	197	1	2		
Hydrostatics	196			1	1
Inorganic Chemistry	79	1			
Organic Chemistry	87	1			
Engineering Chemistry	85			1	
Mineralogy	159, 161	2	1		3
Geology	150	1		1	
Mining	170, 171			1	3
Metallurgy	183	1			
Modern Languages	217, 218	1		1	
Banking and Finance	66	1		1	
Drawing	123		7		7
Chemical Laboratory	81, 82		3		9

Mining Engineering—Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Surveying and Levelling	209, 210	1	9		
Theory of Structures	19	2			
Hydraulics	29a	2		2	
Electricity	140	1		1	
Engineering Chemistry	94	1		1	
Analytical Chemistry	80	1		1	
Assaying	173		3	1	3
Petrography	163	1		1	
Mineralogy	164		2		2
Economic Geology	151, 156	2		2	2
Ore Deposits	155	1		1	
Mining	172	1	3	1	
Ore Dressing	177	1		1	
Ferro-Metallurgy	181	1		1	
Metallurgy	184	1		1	
Limited Companies	67	1		1	
Drawing	132				8
Chemical Laboratory	93		3		7

Fourth Year.

Thermodynamics	34	1		1	
Electrochemistry		1		1	
Assaying	174	1	3		
Petrography	166	1	2	2	2
Geology, Archaean and Glacial	152	2	1	2	
Geology, Mining	153	1		1	
Mining	175	1		1	
Ore Dressing	179	1		1	
Metallurgy	180, 182	1		1	6
Cost-keeping, etc.	69	1		1	
Milling	176		3		3
Power	32*a*, 39*a*, 141		3		3
Design	215		3		3
Chemical Laboratory	112		12		
Thesis	219		3		6

3. DEPARTMENT OF MECHANICAL ENGINEERING.

The course in this Department is designed to meet the needs of those students who are intending to take up the work connected with Mechanical Engineering such as: the design of gas engines, steam engines, steam boilers, steam turbines, air compressors, etc.; the design and installation of the machinery connected with power plants and central stations, steam piping and other similar problems. The work is also so arranged that the student becomes somewhat familiar with the design of travelling cranes and mill buildings and similar problems connected with structural steel work.

Since the work of the mechanical engineer and of the electrical engineer are closely allied, the courses in these two departments in the first two years are identical and cover the subjects mentioned below.

In the third year the work becomes more specialized, the mechanical engineers paying more attention to heat engines of various types, and to mill building design and other work of similar nature. The study of electricity is continued and the student gets considerable practice in the mechanical and electrical laboratories.

In the fourth year the student devotes himself still more closely to his chosen work, placing the greater stress on thermodynamics and the theory and testing of heat engines, and problems in machine design. Much time is spent in the mechanical laboratories testing gas and steam engines and other machines.

Candidates for the degree in this department are required to present satisfactory evidence of having had at least eight months' practical experience in one of the principal trades connected with Mechanical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering, as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSTRUCTION.

Mechanical Engineering—First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Magnetism and Electricity	135	2			
Electric Circuits	136			2	
Elementary Chemistry	75	2		2	
Drawing	120		20		20
Electricity	137		1½		1½
Modern Language	217, 218	1		1	
Accounts	65	1		1	

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Dynamics	12	1		1	
Theory of Mechanism	25	2		2	
Steam Engines	38	1			
Strength of Materials	13	2		2	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Electricity	138, 139	2	2½	2	2½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Banking and Finance	66	1		1	
Modern Language	217, 218	1		1	
Drawing	123		12		19
Chemical Laboratory	81		6		

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Mechanics of Machinery	26	1		1	
Machine Design	27	1	7½	1	7½
Thermodynamics	33, 35	2	2	2	3
Heat Engines	39	1		1	
Hydraulics	29, 30	2	1	2	
Theory of Structures	19	2			
Ferro-Metallurgy	181	1		1	
Magnetism and Electricity	142	3	4½	1	4½
Alternating Current	143	1		1	
Engineering Chemistry	94	1		1	
Limited Companies	67	1		1	
Strength of Materials	15		2		
Drawing	132		3		3

Fourth Year.

Mill Building Design	24	1	3	1	3
Cost-keeping, etc.	69	1		1	
Machine Design	28	1	4	1	4
Thesis	219				
And two of					
(*d*) Hydraulics	31, 32	3	9	3	9
(*e*) Strength of Materials	16	3½	10	3½	10
(*g*) Thermodynamics	36, 37	3	10	3	10

4. DEPARTMENT OF ARCHITECTURE.

The instruction in this department is arranged to lay a broad foundation for the subsequent professional life of its graduates, and incidentally to prepare its students to be immediately useful in an architect's office. The curriculum has been arranged to meet the æsthetic and scientific needs of the profession, and includes History and Principles of Architecture, Freehand Drawing in pencil, ink and colour, Modelling, Architectural Design, Analysis and Criticism of Buildings, Mathematics, Statics, Strength and Elasticity of Materials, Theory of Construction and Heating and Ventilation.

The equipment of the department includes a working library of 1,000 volumes, a large file of periodicals, 2,500 photographs, 2,000 stereographic photos, 4,500 lantern slides, and a large collection of models and casts.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	1		1	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Building Measurement	52	1	9	1	
Statics	10	2		2	
Elementary Chemistry	75	2		2	
History and Principles of Architecture	40	1		1	
French	217	1		1	
Accounts	65	1		1	
Drawing	118		12		21
Freehand Drawing	49		2		2
Modelling	50		2		2

Second Year.

Subject	No.	Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Strength of Materials	13	2		2	
Engineering Chemistry	94	1		1	

Second Year—Continued.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Optics	197	1	1½		
Hydrostatics	196			1	1½
Architectural Design	46	1		1	
History of Architecture	41	1		1	
Orders of Architecture	45	1		1	
History of Ornament	43	1		1	
French	217	1		1	
Banking and Finance	66	1		1	
Drawing Architectural Design	125		20		20
Freehand Drawing	49*a*		2		2
Modelling	50*a*		2		2

Third Year.

Subject	No.	Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Descriptive Geometry	131	1		1	
Acoustics	195	1	3	1	
History of Architecture	42	1		1	
History and Principles of Ornament	44	1		1	
Architectural Design	47	1		1	
Building Materials	53	2		2	
Theory of Structures	19	2			
Cements and Concrete	21			1	
Limited Companies	67	1		1	
Strength of Materials	15		1		1
Photography	199	1	1½		1½
Modelling	50*b*		2		2
Water Color Painting	49*b*		2		2
Drawing Architectural Design	130		16		22

Fourth Year.

Subject	No.	Lect.	Lab'y.	Lect.	Lab'y.
Strength of Materials	17		6		6
Electricity	146	1		1	
Heating and Ventilation	53	1		1	
Sanitary Science	52	1		1	
Contracts and Specifications	68			1	
Thesis	219		3		3
Drawing from life	49*c*		2		2
Modelling from life	50*c*		2		2
And one of					
(*l*) Architectural Design	48	2	20	2	20
(*m*) Architectural Engineering	216	4	22	3	26

5. DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY.

The course in Analytical and Applied Chemistry is designed to furnish instruction suitable for those students who intend to practise chemistry as a profession, either as analysts or as works chemists.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Electricity and Magnetism	135	1		1	
Biology	61, 62	2	3	2	3
Accounts	65	1		1	
Electric Circuits	136	1		1	
Elementary Chemistry	75	2		2	
Elementary Mineralogy	157	2			
Inorganic Chemistry	77	1		1	
German	218	1		1	
Drawing	119		4		4
Electricity	137		1		
Chemical Laboratory	78		10		14
Mineralogy	158		4		3

Second Year.

Electricity	138, 139	2	2½		2½
Engineering Chemistry	85			1	
Industrial Chemistry	86	1		1	
Organic Chemistry	88	2		2	
Physical Chemistry	90	2		2	
Inorganic Chemistry	79	1			
Analytical Chemistry	80	1		1	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Geology	150	1		1	
*Biology or	63	1	3	1	3
Calculus	190	2		2	
German	218	1		1	
Banking and Finance	66	1		1	
Chemical Laboratory	89		15		16
Metallurgy	183			1	
Mineralogy	162				1

* Students should consult the head of the Department of Chemistry as to the option to be selected.

Third Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Electrochemistry	101, 102	1	3	1	
Engineering Chemistry	94	1		1	
Industrial Chemistry	95	1		1	
Organic Chemistry A	97	2		2	
Organic Chemistry B	98			1	
Chemical Plant	96	1		1	
Ferro-Metallurgy	181	1		1	
Metallurgy	184	1		1	
Economic Geology	151	2		2	
Crystallography	167	1		1	
Limited Companies	67	1		1	
German	218	1		1	
Chemical Laboratory	91		16		20
Assaying	173	1	3		3
Heat	198	1	1½		
Electricity	140			1	
Fourth Year.					
Inorganic Chemistry	103	1		1	
Organic Chemistry	104	1		1	
Cost-keeping, etc	69	1		1	
German	218	1		1	
Thesis	219				
And one of					
(*h*) Electrochemistry	108, 109	2	28	2	28
(*i*) Industrial Chemistry	106, 107	1	29	1	29
(*j*) Sanitary and Forensic Chemistry and Bacteriology	64, 110, 112	1	29	1	29
(*k*) Metallurgy	180	2	28		28

6. DEPARTMENT OF CHEMICAL ENGINEERING.

In many industries there is a demand for a man who combines the technical knowledge of the mechanical engineer with a knowledge of chemistry. It is to fill this want that the course in Chemical Engineering is designed.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Electric Circuits	136			2	
Elementary Chemistry	75	2		2	
Inorganic Chemistry	77	1		1	
German	218	1		1	
Accounts	65	1		1	
Drawing	120		17		19
Electricity	137		1½		1½
Chemical Laboratory	76				3

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Strength of Materials	13	2		2	
Electricity	138, 139	2	2½	2	2½
Engineering Chemistry	85			1	
Industrial Chemistry	86	1		1	
Organic Chemistry	88	2		2	
Physical Chemistry	90	2		2	
Inorganic Chemistry	79	1			
Optics	197	1	1½		
Hydrostatics	196			1	1½
German	218	1		1	
Banking and Finance	66	1		1	
Drawing	123		13		14
Chemical Laboratory	84		6		6
Metallurgy	183			1	

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Theory of Structures	19	2			
Thermodynamics	33, 35	2		2	3
Electrochemistry	101, 102	2	3		
Engineering Chemistry	94	1		1	
Organic Chemistry A	97	2		2	
Organic Chemistry B	98			1	
Industrial Chemistry	95	1		1	
Analytical Chemistry	80	1		1	
Metallurgy	184	1		1	
Ferro-Metallurgy	181	1		1	
Chemical Plant	96	1		1	
Limited Companies	67	1		1	
German	218	1		1	
Machine Design	27	1	4½	1	4½
Assaying	173				3
Electricity	140			1	
Drawing	132		2		
Chemical Laboratory	92		11		12

Fourth Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Hydraulics	29*a*	2		2	
Inorganic Chemistry	103	1		1	
Organic Chemistry	104	1		1	
Cost-keeping, etc.	69	1		1	
Power	32*a*, 39*a*, 141		3		3
German	218	1		1	
Thesis	219				
And one of					
(*h*) Electrochemistry	108	2		2	
(*i*) Industrial Chemistry	106, 107	1		1	
(*j*) Sanitary and Forensic Chemistry and Bacteriology	64, 110, 112	1		1	
(*k*) Metallurgy	180	2	25		23

7. DEPARTMENT OF ELECTRICAL ENGINEERING.

The course in Electrical Engineering is arranged to provide preliminary training for those who would follow any of the various lines of activity connected with electrical industry.

The first two years of the course are devoted to fundamental scientific principles, and incidentally more or less of their application to engineering problems in mechanical, civil, and electrical work. Many problems are solved in the drafting rooms by graphical methods. The third year includes further theoretical work, more particular attention being given to electrical and mechanical studies in theory, operation, and design. The fourth year is devoted to advanced work in alternating current theory and practice combined with similar study in thermodynamics, hydraulics or electrochemistry.

A large amount of laboratory practice is provided, most of which belongs to the third and fourth years. In this last year most of the time is spent in laboratory investigations and studies resulting therefrom.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' mechanical experience in one of the principal trades connected with Electrical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Magnetism and Electricity	135	2			
Electric Circuits	136			2	
Chemistry	75	2		2	
Modern Language	217, 218	1		1	
Accounts	65	1		1	
Drawing	120		20		20
Electricity	137		1½		1½

Second Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Theory of Mechanism	25	2		2	
Steam Engines	38	1			
Electricity	138, 139	2	2½	2	2½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Modern Language	217, 218	1		1	
Banking and Finance	66	1		1	
Drawing	124		12		19
Chemical Laboratory	81		6		

Third Year.

Subject	No.	Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Mechanics of Machinery	26	1		1	
Machine Design	27	1	3¼	1	3¼
Hydraulics	29, 30	2	1	2	
Thermodynamics	33, 35	2	2	2	1½
Heat Engines	39	1		1	
Electrochemistry	101, 102	2	3		
Magnetism and Electricity	142	2		2	
Alternating Current	143	1		1	
Electrical Design	145	1	1½	1	3
Electrical Laboratory	144		6		6
Engineering Chemistry	94	1		1	
Ferro-Metallurgy	181	1		1	
Limited Companies	67	1		1	

Fourth Year.

Subject	No.	Lect.	Lab'y.	Lect.	Lab'y.
Applied Electricity	146, 147	3	18	3	18
Cost-keeping, etc.	69	1		1	
Thesis	219				
And one of					
(*d*) Hydraulics	31, 32	3	10	3	10
(*g*) Thermodynamics	36, 37	3	10	3	10
(*h*) Electrochemistry	108, 109	3	10	3	10

8. DEPARTMENT OF METALLURGICAL ENGINEERING.

The object of this course is to provide instruction and preliminary training for those who intend to become metallurgical engineers. Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' experience in metallurgical work.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2		2	
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Inorganic Chemistry	75, 77	3		3	
Chemical Laboratory	78		9		9
Accounts	65	1		1	
Mineralogy		1	1	1	1
Drawing	120		10		10

Second Year.

Subject	No.	Lect.	Lab'y.	Lect.	Lab'y.
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Hydrostatics	196			1	2
Electricity	140			1	
Steam Engines	38	1			
Magnetism and Electricity	135	2	3		
Inorganic Chemistry	79, 80, 85			2	
Banking and Finance	66	1		1	
Chemical Laboratory			6		6
Mineralogy			1		1
Mining	170, 171	1		1	2
Metallurgy	185	1		2	2
Heat	198	1	2		
Spanish		1		1	
Drawing			7		7

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Theory of Mechanism	25	2		2	
Hydraulics	29*a*	2		2	
Theory of Construction	19	2			
Limited Companies	67	1		1	
Physical Chemistry	90, 93	2	5	2	5
Electrochemistry	101, 102	2	3		
Ferro-Metallurgy	181	1		1	
Cement and Concrete	21	1		1	
Assaying		1	3	1	5
Metallurgy	186	1	4	4	4
Ore Dressing	172, 177	1		1	3
Drawing					3

Fourth Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Thermodynamics	34	1		1	
Heat Engines	39	1		1	
Ore Dressing		2	2	2	4
Assaying			4		
Costs		1		1	
Plant Design		1	4	1	4
Power	32*a*, 39*a*, 141		3		3
Metallurgy	186*a*	2	9	2	9
Thesis			4		4

OUTLINE OF COURSES OF INSTRUCTION.

APPLIED MECHANICS.

10. STATICS:—*T. R. Loudon.*

Departments 1, 2, 3, 4, 6 and 7, I Year; 2 hours per week both terms.

This course of lectures deals with forces in a single plane, and concerns chiefly the calculation of tension, compression and shearing stresses in frame structures and solid beams. It also deals with the consideration of problems relating to friction.

11. DYNAMICS:—*J. McGowan.*

Departments 1, 2, 3, 6, 7 and 8, I Year; 2 hours per week; both terms.

This course of lectures deals with bodies having motion of translation in one plane; also with relative motion, momentum, work and energy.

Text book:—Tutorial Dynamics—Briggs and Bryan.

12. DYNAMICS OF ROTATION:—*W. J. Loudon.*

Departments 1, 2, 3, 6, 7 and 8, II Year; 1 hour per week; both terms.

This course covers angular motion, including moments of inertia, simple harmonic motion, the pendulum, centres of mass, suspension and percussion, the simple theory of the fly wheel and the governor.

Text book:—Dynamics of Rotation—Worthington.

13. STRENGTH OF MATERIALS:—*P. Gillespie.*

Departments 1, 2, 3, 4, 6, 7 and 8, II Year; 2 hours per week; both terms.

In this course the strength and elasticity of materials are mathematically treated. The stresses in such elements of structures as the tie rod, the beam, the strut and the member subjected to shear are investigated and the elementary principles of design established. In the lecture and drafting rooms through numerous problems involving the design of simple beams, columns, riveted connections, etc., these principles are exemplified. The work includes also the discussion of eccentric loading, suddenly applied loads and repeated stresses.

Reference Book:—Mechanics of Materials, Merriman.

14. STRENGTH AND ELASTICITY OF MATERIALS:—*J. McGowan.*

Departments 1, 3 and 4, III Year; 1 hour per week; one term.

This course is intended to give the student an introduction to the experimental study of the strength and elasticity of materials. It is intended that he shall acquire some familiarity with the construction and operation of testing machines and with the properties of the ordinary building materials.

Reference Book:—Laboratory Instructions, Department of Applied Mechanics U. of T. 1911.

16. THEORY OF STRUCTURES:—*J. McGowan.*

Departments 1 and 3, IV Year; 2 hours per week; both terms.

The work taken up in this course of lectures consists in swing bridges, arches, suspension bridges and some special features in column construction. Some examples of the above structures will be designed in the class and carried out in further detail in the drafting room.

Reference Book:—Modern Framed Structures—Johnson.

17. STRENGTH AND ELASTICITY OF MATERIALS:—*P. Gillespie,*

Departments 1, 3 and 4, IV Year; a laboratory course of about 11 hours per week.

This course of experiments is intended to give the student practice in investigating the elastic and physical properties of iron, steel, concrete, timber and other building materials.

Reference book:—Materials of Construction—Johnson.

18. THEORY OF STRUCTURES:—*C. R. Young.*

Department 1, III Year; 2 hours per week; both terms.

The work of the first term comprises a thorough discussion of restrained, continuous and trussed beams, multiple beam and box girders, plate girders and certain practical aspects of column design. A number of designs of girders and structural details are worked out in the class and drafting rooms.

The second term is given chiefly to the design of a riveted truss highway span and a riveted truss railway span, the complete designs being made in the lecture and drafting rooms.

19. THEORY OF STRUCTURES:—*C. R. Young.*

Departments 2, 3, 4 and 6, III Year; 2 hours per week; first term.

The work is practically the same as that for Department 1 in the first term except that a building plate girder is designed instead of a plate girder bridge span.

Text books:—Modern Framed Structures—Johnson, Bryan and Turneaure; Theory of Structures—Spofford; Bridge and Structural Design—Thomson; Aids in Structural Design—Young; Carnegie Pocket Companion; Cambria Steel.

20. FOUNDATIONS, RETAINING WALLS AND DAMS:—*P. Gillespie.*

Required in Department 1, IV Year; 1 hour per week; both terms.

This course of lectures is devoted to the design of the structures mentioned. Preparatory to the discussion of the practical aspects of the subjects, and in order to gain familiarity with the fundamental principles involved, a part of the first term is given over to the consideration of the theory of compound stress. The most approved forms of construction of retaining walls, footings, abutments, piers and dams are then described, and typical designs are worked out in the class and drafting rooms.

Text books and books of reference:—Retaining Walls for Earth—M. A. Howe; Walls, Bins and Grain Elevators—M. S. Ketchum; A Treatise on Masonry Construction—I. O. Baker; Design and Construction of Dams—E. Wegmann.

21. CEMENTS AND CONCRETE:—*P. Gillespie.*

Departments 1 and 4, III Year; 1 hour per week; second term.

The manufacture, testing and use of Portland Cement and the elementary theory of reinforced concrete are discussed in this course of lectures.

22. REINFORCED CONCRETE:—*P. Gillespie.*

Departments 1 and 4, IV Year; 1 hour per week.

The theory of the strength of reinforced concrete elements including the beam, the slab, the T-beam and the column, is continued in this course.

The analysis of the monolithic arch by the elastic theory is discussed, and the student is required in the drafting room to apply his knowledge to the design of simple structures.

Reference books:—Principles of Reinforced Concrete Construction—Turneaure and Maurer; Concrete, Plain and Reinforced,—Taylor and Thompson.

23. IRON AND STEEL.—*J. Galbraith, T. R. Loudon.*

Taken by students in Year IV, who select the options (*c*) Structural Engineering and (*e*) Strength and Elasticity of Materials.

Metallography—Mechanical Treatment, Heat Treatment; Metallurgy; Physical Properties; 1 lecture per week. Laboratory, second term.

24. MILL BUILDING DESIGN:—*C. R. Young.*

Departments 1 (*Structural Engineering Option*), 3 and 4 (*Architectural Engineering Option*), IV Year; 1 hour per week; both terms.

The structural problems involved in the design of mill buildings of timber, steel and reinforced concrete are discussed in this course of lectures. Consideration is given to the various types of buildings, the conditions governing their choice and the details of construction in different materials. Designs of portions of mill buildings are worked out in the class and drafting rooms.

Text books:—Mill Buildings—Tyrrell; Steel Mill Buildings—Ketchum.

MACHINERY.

25. THEORY OF MECHANISM:—*M. B. Jackson.*

Departments 3, 7 and 8, II Year; 2 hours per week; both terms.

This course of lectures treats of the motions of machines, the latter being assumed to be of sufficient strength to resist acting forces. The formation of machines is dealt with in a general way and investigations of the velocities of points and links are made. The design of gear teeth and the application of trains of gears are taken up, also problems in static equilibrium.

Problems are worked out in the drafting room in which the methods given are employed.

Text book:—Theory of Machines—Angus.

26. MECHANICS OF MACHINERY:—*M. B. Jackson.*

Departments 3 and 7, III Year; 1 hour per week; both terms.

In this course the questions dealt with are the construction of acceleration diagrams, the determination of the accelerations of various parts of machines, the kinetic energy of machines, the effect of the weights and accelerations of parts on the velocity of the flywheel and the proper weight of the latter to fulfil given conditions. The theory of various forms of governors is also fully taken up and the efficiency of machines. The discussion of the design of slide valves and gears is continued in this course.

Text books:—Slide Valve Gears—Halsey; Theory of Machines—Angus.

27. MACHINE DESIGN:—*J. T. Lagergren.*

Departments 3, 6, 7, III Year; 1 hour per week; both terms.

The lectures in this course deal principally with the applications of the principles of kinematics and the theory of the strength of materials to the design of machine parts, such as shafting, gearing, journals, clutches, etc.

In addition to the lecture course time is spent in the drafting room where designs involving the above principles are worked out and the necessary calculations made. These designs are made as parts of some actual machine, such as an engine.

The laboratory work occupies 7½ hours per week for Department 3, 4½ hours for Department 6 and 3¼ hours for Department 7.

28. MACHINE DESIGN:—*J. T. Lagergren.*

Department 3, IV Year; 4 hours per week.

The lectures and practical work in this course are meant to supplement those of Course 27 and deal with more difficult problems and designs. The design of a complete machine is taken up, and detail drawings as well as an assembly drawing are made.

HYDRAULICS.

29. HYDRAULICS—GENERAL COURSE:—*J. J. Traill.*

Departments 1, 3 and 7, III Year; 2 hours per week.

This is an introductory course of lectures in hydraulics, and is devoted to the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of discharge by various methods, such as orifices and weirs, the conditions of flow obtaining in open channels, artificial and natural, and in pipes flowing partially full, together with other kindred subjects.

The object of this course is to provide the student with a good working knowledge of the fundamental principle of hydraulics, such as is useful in practical work, and is necessary to the intelligent investigation of more advanced problems, such as the design of turbines, water-wheels and power plants generally.

29*a*. HYDRAULICS:—*J. J. Traill.*

Departments 2 and 8, III Year; Department 6, IV Year.

This course deals with the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of water by various methods, the conditions of flow in open channels and in pipes partly full. This work is followed by a brief discussion on pumps and other hydraulic machines. The last-mentioned part of the course is supplemented by experimental work under the general title "Power".

30. HYDRAULIC LABORATORY:—*J. J. Traill.*

Department 1, III Year; 3 hours per week; one term. Departments 3 and 7, III Year; 3 periods of 3 hours each; first term. Department 6, IV Year; 3 hours per week; second term.

The work in this course is intended to illustrate the lecture course given in Hydraulics and to give the student some working acquaintance with the formulas met with in practice. Experiments are made to determine the coefficients for an orifice and the coefficients of discharge for a weir. The results of these experiments are used in measuring the discharge in subsequent experiments on meters and for the determination of hydraulic resistances in various cases of flow in pipes.

31. HYDRAULICS:—*R. W. Angus, J. J. Traill.*

Departments 1, 3 and 7, IV Year; 3 hours per week; both terms.

Following up the third year course in this subject the theory already acquired is applied to the solution of problems connected with branched pipes, water-mains discharging at various points along their length, the effect of a dam on the water level at any point on a stream and numerous other problems.

The most important question considered and to which most of the lectures are devoted is the theory of turbines and centrifugal pumps, the effect of the design on the speed, discharge, power and efficiency being fully taken up.

Text books:—Hydraulic Motors, etc.—Bodmer; Centrifugal Pumps—Loewenstein and Crissey; Hydraulics—Merriman; Water-Power Engineering—Mead.

32. HYDRAULICS:—*R. W. Angus, J. J. Traill.*

Departments 1, 3 and 7, IV Year; about 9 hours per week.

A laboratory course devoted to experimental work on turbines of various types and centrifugal and turbine pumps and other similar devices. This experimental work is arranged to illustrate the lectures on turbine and pump design. The experiments are made on two large turbine pumps used in the laboratory supply, as well as on apparatus specially designed for instruction.

Various methods of measuring water-power and the efficiency of machines are also given.

32a. POWER:—*J. J. Traill.*

Departments 2, 6 and 8, IV Year; 20 hours.

A laboratory course of experiments on pumps, turbines, weirs, orifices, etc.

32b. HYDRAULICS.—*J. J. Traill.*

Department 1, IV Year.

This is a lecture and laboratory course of six hours per week, first term, dealing with the flow of water in pipes and open channels, measurement of water, and pumps and pumping.

HEAT ENGINES.

33. THERMODYNAMICS:—*R. W. Angus.*

Departments 3, 6 and 7, III Year; about 2 hours per week.

A lecture course in which the subject is treated in such a way as to make it of practical value and give a working acquaintance with the principles on which it is based. After the elementary ideas have been given and the proofs of the properties of Carnot's cycle, applications of the subject are made to the perfect gas and to saturated steam and to the various types of engines. Temperatures are taken from the air thermometer.

34. THERMODYNAMICS:—*R. W. Angus.*

Departments 1, 2 and 8, IV Year; 1 hour per week; both terms.

This course is especially designed to give the student a working knowledge of thermodynamics as applied to the perfect gas so that he will be able to understand clearly the action of air compressors, etc. After deducing general principles, the efficiency of compressed air transmission and the relative merits of different types of compressors are discussed.

35. THERMODYNAMIC AND MECHANICAL LABORATORY:—*L. M. Arkley.*

Department 3, III Year; 2 hours per week, first term; 3 hours per week, second term. Department 7, III Year; 2 hours per week, first term; 1½ hours per week, second term. Department 6; 3 hours per week, second term. Department 1, IV Year; 1 hour per week, both terms.

This laboratory course is designed to assist in a clearer understanding of thermodynamics, machine design and mechanics of machinery. The work in thermodynamics consists in the setting of slide valves, indicating engines measuring the brake horse-power, simple engine and boiler tests and the testing of gas and gasoline engines under various conditions. The mechanical laboratory work deals with the efficiency of belts and ropes as well as of several machines of simple construction. An examination of lubricating oils is also made by means of oil testing machines and other well-known devices. Experiments are also made on the balancing of reciprocating and rotating masses.

36. THERMODYNAMICS:—*L. M. Arkley, M. B. Jackson.*

Departments 3 and 7, IV Year; 3 hours per week; both terms.

This is a continuation of the introductory course, the subject being here treated from a general standpoint and the idea of entropy and of the absolute scale of temperatures being introduced. The course includes the treatment of saturated and superheated vapours, gases, the flow of fluids, chimney and boiler efficiency and the theory of various engines and other appliances including air compressors, refrigerating machines, injectors and the various forms of link motions and radial valve gears.

Text books:—Thermodynamics—Peabody; Steam Tables—Peabody.

37. THERMODYNAMICS:—*R. W. Angus, L. M. Arkley, M. B. Jackson.*

Departments 3 and 7, IV Year; about 10 hours per week.

The work in this year is a continuation and extension of the work covered in the third year laboratory course. Careful tests are made of engines of various types, such as simple, tandem, and cross-compound steam engines; steam turbines; refrigerating machines; air engines; injectors and steam pumps, etc.; and an application is made of Hirn's Analysis and the entropy diagram to the results obtained. A complete set of experiments is made on each machine and the result plotted so as to show clearly to the student the effect of various alterations in the adjustment of the engine on the resulting efficiency.

Several modern gas and gasoline engines and a gas producer give ample opportunity for the study of this type of engine, and facilities are provided for sampling the gas supply and exhaust.

Two experimental stacks and three boilers enable results to be obtained on boiler efficiency and chimney draft.

38. STEAM ENGINES:—*L. M. Arkley.*

Departments 3, 7, and 8, II Year; one hour per week; one term.

This course of lectures includes a discussion of the principles of action of the steam engine; also the theory and design of various simple forms of valve gears used in the operation of such engines.

39. HEAT ENGINES:—*L. M. Arkley.*

Departments 3 and 7, III Year; Department 8, IV Year; one hour per week, both terms.

This course in heat engines is intended for students in Mechanical, Electrical and Metallurgical Engineering, to be supplementary to the general course of lectures in thermodynamics.

The principal commercial forms of heat engines are dealt with in a more or less descriptive manner; special attention is given to considerations affecting the design of the ordinary forms of steam engines, gas engines and oil engines.

39a. POWER:—*L. M. Arkley.*

Departments 1, 2, 6 and 8, IV Year; 20 hours.

A course of experiments with steam and gas engines, compressed air, etc.

ARCHITECTURE.

40. HISTORY OF ARCHITECTURE:—*A. Wellesley McConnell.*

Department 4, I Year; one hour per week; both terms.

In this course the development of architecture is treated very briefly and in an elementary manner, from the Pyramids of Egypt to the present, laying special emphasis on the Egyptian, Grecian and Western Asiatic work. The antique Greek and Roman orders are studied, and the students are required to make rendered drawings in the studio of certain orders and elements. An attempt is made to develop the student's sense of proportion, and in the latter part of the second term he is required to study a simple problem in design.

41. HISTORY OF ARCHITECTURE:—*A. Wellesley McConnell.*
Department 4, II Year; one hour per week; both terms.
The Classical, Early Christian, Byzantine and Romanesque styles of architecture are studied with the aid of the lantern. The student is required to become acquainted with the best examples in these styles in order that his sense of proportion and his taste may be developed and his knowledge of the different elements extended.

42. HISTORY OF ARCHITECTURE:—*A. Wellesley McConnell.*
Department 4, III Year; one hour per week; both terms.
In this course the work of the previous year is continued, with the study of Gothic and the Renaissance.

43. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*
Department 4, II Year; one hour per week; both terms.
In this course the development of Ornament is traced from the beginning through Egyptian, Assyrian, Grecian, Roman, Byzantine, Romanesque and Moresque styles. An attempt is made to analyze ornament of the best periods and to systematize the principles followed in form and colour. The development and types of mouldings are also studied.

44. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*
Department 4, III Year; one hour per week; both terms.
A continuation of the course in Ornament given to the Second Year. Instruction is given in lectures with the aid of the stereopticon. The students are required to become familiar with the characteristics and forms of the ornament used in the Gothic and Renaissance styles.

45. ORDERS OF ARCHITECTURE:—*A. Wellesley McConnell.*
Department 4, II Year; one hour per week; both terms.
Lectures on the Five Orders of Architecture, their affiliated forms and the other elements used in design. Simple problems in elementary design involving the use of the orders and other elements are set from time to time.

46. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, II Year; one hour per week; both terms.

This course is given by means of individual instruction in the class room by criticisms of the solutions of different problems set during the year and by a series of lectures. It is in this course that the student begins the serious study of design; continued practice in architectural drawing and rendering affords the training necessary to make the student a proficient draughtsman.

47. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, III Year.
Theory and practice of Design.
This course is given by individual instruction in the studio and by lectures. The greater part of the course is devoted to problems in design, and forms a continuation of the course given in the preceding year.

48. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, IV Year.
The entire course is devoted to advanced academic training in designing the more monumental classes of buildings. The student is required to design and submit sketches and working drawings of some subject to be selected by himself.

48A. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, IV Year; Architectural Engineering Option.
A short course of lectures and studio work referring especially to the artistic side of the design of commercial buildings.

49. FREEHAND DRAWING AND WATER COLOR PAINTING:—*C. W. Jefferys.*
Department 4, I Year; 2 hours per week; both terms.
Drawing from still life objects. Primary freehand perspective. Primary pencil and pen and ink rendering.

49A. Department 4, II Year; 2 hours per week; both terms.
Drawing and monochrome painting from still life.
Drawing from the cast.
Pencil, pen and ink, and monochrome rendering.
Primary water color.
Drawing from landscape and natural objects.

49B. Department 4, III Year; 2 hours per week; both terms.
Drawing from the cast.
Water color from still life. Water color rendering.
Drawing from landscape and natural objects.
Students who are sufficiently advanced are admitted to the Fourth Year Life Drawing Class.

49C. Department 4, IV Year; 2 hours per week; both terms.
Water color from still life and from landscape.
Drawing from life.
Water color rendering.

50. MODELLING:—*J. L. Banks.*
Department 4; I Year; 2 hours per week; both terms.
The Orders. Synopsis of styles.

50A. Department 4; II Year; 2 hours per week; both terms.
The styles elaborated.
Problems in figures and in relation to architecture.

50B. Department 4; III Year; 2 hours per week; both terms.
Styles continued.
Problems, combination of figure, ornament, and architecture, and then relative values.

50C. Department 4; IV Year; 2 hours per week; both terms.
Modelling from life.
Anatomy.
Composition of groups.

51. STRUCTURAL DESIGN:—*C. R. Young.*
Departments 1 (*Structural Engineering Option*) and 4 (*Architectural Engineering Option*), IV Year; 1 hour per week first term, and 2 hours per week second term.
One lecture per week for both terms is devoted to the ordinary problems connected with the structural design of buildings of timber, steel and reinforced concrete. In the second term one additional lecture per week is devoted to higher structural problems arising in building work and to a consideration of the structural design of elevated tanks, standpipes and towers. In both terms typical structures, or portions of them, are designed in the class and drafting rooms.

51A. STRUCTURAL DESIGN:—*C. R. Young.*
Department 4, IV Year; 1 hour per week; both terms.
This course is contained in that given to students taking the Structural Engineering and the Architectural Engineering Options. Those taking the regular architectural course in the fourth year are required to attend all of the lectures in this subject in the first term, but only *one* lecture per week in the second term.
Text books:—Architectural Engineering—Freitag; Steel Construction—Tucker; Structural Details—Jacoby; Architects' and Builders' Pocket-Book—Kidder.

52. BUILDING MEASUREMENT:—*C. H. C. Wright.*
Department 4, I Year; 1 hour per week; both terms.
In this course of lectures the principles of measurements and mensuration with special reference to buildings will be discussed. With this is combined 4½ hours per week practice in measurements of existing buildings, quantities, etc.

53. BUILDING MATERIALS:—*C. H. C. Wright.*
Department 4, III Year; 2 hours per week; both terms.
The structural and aesthetic value of the various building materials.

54. SANITARY SCIENCE:—*C. H. C. Wright.*
Department 4, IV Year; 1 hour per week; both terms.
Modern plumbing, its design and installation.

54A. HEATING AND VENTILATION:—*C. H. C. Wright.*
Department 4, IV Year; 1 hour per week; both terms.
The design of different systems, where they should be used, heating specifications, etc.

ASTRONOMY AND GEODESY.

55. ASTRONOMY, ELEMENTARY:—*C. A. Chant.*
Department 1, II Year; 1 hour per week; both terms.
A course in descriptive Astronomy, explaining the ordinary astronomical terms, and describing the various celestial bodies and their motions. In the evenings opportunity will be given for identifying the stars and for observing with telescopes.
Text book:—New Astronomy:—*D. P. Todd.*

56. ASTRONOMY AND GEODESY:—*L. B. Stewart.*
Department 1, III Year; 2 hours per week.
The course of lectures deals with the determination of time, latitude, longitude and azimuth, by methods adapted to the use of the surveyor's transit and the sextant. It is designed to fulfil the requirements of the final examinations for Ontario and Dominion Land Surveyors.
In Geodesy an account is given of the principles and methods of a secondary triangulation survey, also of the principles involved in the North-West system of survey.
Text book:—Practical Astronomy as applied to Geodesy and Navigation—Doolittle; Nautical Almanac, 1914.

57. FIELD WORK:—*L. B. Stewart, S. R. Crerar.*
Department 1, III Year; about 1 hour per week; first term.
The practical work in this subject comprises observations in the field with the transit and sextant for the determination of time, latitude and azimuth by the methods described in the lectures.

58. ASTRONOMY (Advanced):—*L. B. Stewart.*
Department 1, IV Year; 2 hours per week.
The lecture course in this subject comprises the theory and adjustment of the instruments used in connection with a geodetic survey; the methods of taking and reducing observations for time, longitude, latitude, and azimuth, with the precision required on such a survey; and other matters relating to these subjects.

59. GEODESY AND METROLOGY:—*L. B. Stewart.*
Department 1, IV Year; 2 hours per week.
The lecture course includes a description of the methods of measuring base lines and the angles of a triangulation; the geometry of the spheroid with applications to geodetic problems; the computation of geodetic positions; the solution of large triangles on the earth's surface, and the adjustment of a triangulation; trigonometric and precise spirit levelling; the determination of the figure of the earth by arc measurements, and by the pendulum; the theory of map projections, etc.

60. ASTRONOMY, GEODESY AND METROLOGY:—*L. B. Stewart.*
Department 1, IV Year; about 23 hours per week.
The practical work in the above subjects includes the observation of meridian transits for time and longitude determinations, and of prime vertical transits for latitude, with the astronomical transit instrument; the observation of meridian zenith distances of stars, and of azimuths at elongation for latitude, with the alt-azimuth; theodolite observations for azimuth; observations for latitude with the zenith telescope; the investigation of the constants of the instruments used, and the reduction of all observations; the measurement of a base line with the steel tape and with wires, and the determination of the constants of the tape; the measurement of the angles of a triangulation and the adjustment of the angles of a network of triangles, etc.

BIOLOGY.

61. ELEMENTARY BIOLOGY:—*B. A. Bensley.*
Department 5, I Year; optional in Department 1, III Year; 2 hours per week; both terms.
A course of two lectures a week throughout the session is designed as an introduction to the whole range of biological studies. After a sketch of the scope and objects of these, the lectures will treat (*a*) of the fundamental principles of biology, as illustrated by the simplest animals and plants; (*b*) of typical forms of higher plants in ascending order; (*c*) of typical forms of animals in a similar way; and (*d*) of the structure and functions of the human body.

Students are recommended to make use of the Biological Museum in connection with this course of lectures. For reference: Jeffrey Parker, Elementary Biology; Ramsay Wright, High School Zoology; Atkinson, Elementary Botany; Huxley, Lessons in Elementary Physiology.

62. ELEMENTARY BIOLOGY:—*A. G. Huntsman and J. H. Faull.*
Department 5, I Year; 3 hours per week; both terms.
An elementary course of laboratory work on the general structure and identification of plants and animals, and the use of the microscope in the examination of tissues and products.

63. ADVANCED BIOLOGY:—*J. H. Faull.*
Department 5, II Year.
A course of instruction in the Morphology and Physiology of Bacteria, Moulds and Yeast Fungi.

63a. ADVANCED BIOLOGY:—*J. H. Faull, E. M. Walker.*
Department 1, IV Year.
(*a*) *Botany*:—An elementary lecture and laboratory course of about 3 hours per week; second term, on the economic algæ and fungi.
(*b*) *Zoology*:—Lecture and laboratory course of 4 hours per week; second term, in the morphology, ecology and classification of aquatic animals.

64. BACTERIOLOGY:—*J. A. Amyot.*
Departments 1, 5 and 6, IV Year; a lecture and laboratory course of 8 hours per week; second term, on elementary bacteriology.

BUSINESS.

65. ACCOUNTING:—*W. S. Ferguson.*
All Departments, I Year; 1 hour per week; both terms.
The principles of accounting; illustrated by typical accounts.

66. BANKING AND FINANCE:—*M. A. Mackenzie.*
All Departments, II Year; 1 hour per week; both terms.
Money and the instruments of credit; bond issues, loans, sinking funds, etc.

67. LIMITED COMPANIES:—*J. M. Langstaff.*
All Departments, III Year; 1 hour per week; both terms.
Partnerships; the history and development of the limited liability company; the Companies Acts; Company finance.

68. CONTRACTS AND SPECIFICATIONS:—*C. R. Young.*
Departments 1 and 4, IV Year; 1 hour per week; second term.

This course of lectures deals with the fundamental principles of contract and specification writing. The critical examination of typical specifications and agreements by the class forms an essential feature of the instruction.

Text books:—Engineering Contracts and Specifications—Johnson; Contracts in Engineering—Tucker; Specifications and Contracts —Wadell-Wait.

69. COST-KEEPING, ETC.:— *J. W. Bain, L. M. Arkley.*

Departments 2, 3, 5, 6 and 7, IV Year.

Works management, mechanical specifications, analysis of costs, reports.

CHEMISTRY.

75. ELEMENTARY CHEMISTRY:—*J. W. Bain.*

All Departments, I Year; 2 hours per week; both terms.

A lecture course in elementary chemistry dealing with the metals and non-metals, with experimental illustrations.

76. ELEMENTARY CHEMISTRY:—*M. C. Boswell.*

Departments 2 and 6, I Year; 3 hours per week; second term.

A laboratory course to illustrate the use of the sensitive balance, to verify some of the laws which form the basis of the science, and to serve as an introduction to quantitative laboratory methods. Instruction given as required before each period.

77. INORGANIC CHEMISTRY:—*W. H. Ellis.*

Departments 5 and 6, I Year; 1 hour per week; both terms.

A lecture course on the elements and important inorganic compounds, supplementing Course 75.

Text book:—Introduction to General Inorganic Chemistry—Alex. Smith.

78. INORGANIC CHEMISTRY:—*L. J. Rogers.*

Departments 5 and 8, I Year; about 17 hours per week; both terms.

A laboratory course of quantitative experiments illustrating the use of the sensitive balance, and confirming the fundamental laws of chemistry; qualitative inorganic analysis; quantitative analysis of pure salts; inorganic preparations; molar weight determinations.

Text book:—Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

79. INORGANIC CHEMISTRY:—*J. W. Bain.*

Departments 2, 5 and 6, II Year; 1 hour per week; first term.

A lecture course on the chemistry of the metals; a continuation of Course 75.

80. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Department 5, II Year; Departments 2 and 6, III Year; 1 hour per week; both terms.
A lecture course on the principles of chemical analysis; select gravimetric and volumetric methods; technical analysis.

81. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Departments 1, 2, 3 and 7, II Year; 6 hours per week; one term.
Laboratory practice in elementary qualitative and quantitative analysis.
Text book:—A Smaller Chemical Analysis—Newth.

82. ANALYTICAL CHEMISTRY:—*J. W. Bain.*
Department 2, II Year; 3 hours per week; both terms.
A laboratory course in the gravimetric determination of metals and acids, with elementary volumetric analysis.
Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

83. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Department 5, II Year; 14 hours per week; 17 weeks.
A laboratory course comprising gravimetric and volumetric methods, acidimetry and alkalimetry.
Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

84. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Department 6, II Year; 6 hours per week; both terms.
A laboratory course in qualitative and elementary quantitative chemical analysis; inorganic preparations.
Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

85. ENGINEERING CHEMISTRY:—*W. H. Ellis.*
Departments 1, 2, 3, 5, 6 and 7, II Year; 1 hour per week; second term.
A lecture course consisting of a study of the industrial production and application of heat and light, and of the chemistry of fuel and the products of combustion.

86. INDUSTRIAL CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, II Year; 1 hour per week; both terms.
A lecture course on the manufacture of salts, acids, alkalies and inorganic chemicals.
Text book:—Inorganic Chemistry—Thorp.

87. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 1, 2, 3 and 7, II Year; 1 hour per week; first term.
A lecture course in elementary organic chemistry.
Text book:—Theoretical Organic Chemistry—Cohen.

88. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 5 and 6, II Year; 2 hours per week; both terms.
A lecture course dealing with the aliphatic compounds.
Text book:—Theoretical Organic Chemistry—Cohen.

89. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 5, II Year; 14 hours per week; 7 weeks.
A laboratory course in organic preparations in the aliphatic series.

90. PHYSICAL CHEMISTRY:—*W. L. Miller.*
Departments 5, 6 and 8, II Year; 2 hours per week; both terms.
A course of lectures on the elements of chemical mechanics, and the theory of solutions.

91. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Department 5, III Year; 19 hours per week; 16 weeks.
A laboratory course on the technical analysis of iron and steel alloys, ores, furnace products, ceramic materials, foods, gases, fuels, etc.

92. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Department 6, III Year; 11 hours per week, first term; 13 hours per week, second term.
A laboratory course in volumetric and technical analysis.

93. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Departments 2 and 8, III Year; 5 hours per week; both terms.
A laboratory course on the technical analysis of ores and furnace products.

94. ENGINEERING CHEMISTRY:—*W. H. Ellis.*
Departments 1, 2, 3, 5, 6 and 7, III Year; Department 4, II Year; 1 hour per week; both terms.
A lecture course on the application of chemistry to engineering problems; air, water, sewage, the materials of construction, explosives, etc.

95. INDUSTRIAL CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, III Year; 1 hour per week; both terms.
A lecture course on petroleum and its products, coal tar and its products, the destructive distillation of wood; fats, oils, soap, sugar, starch, and gums; fermentation industries, etc.
Text book:—Industrial Chemistry—Thorp.

96. CHEMICAL PLANT:—*J. W. Bain.*
Departments 5 and 6, III Year; 1 hour per week; both terms.
A lecture course on the machinery and plant used in chemical manufacturing.

97. ORGANIC CHEMISTRY: (A)—*M. C. Boswell.*
Departments 5 and 6, III Year; 2 hours per week; both terms.
A lecture course on the aromatic series.
Text book:—Theoretical Organic Chemistry—Cohen.

98. ORGANIC CHEMISTRY (B):—*F. B. Allan.*
Departments 5 and 6, III Year; 1 hour per week; second term.
A lecture course on stereoisomerism, desmotropism, etc.

99. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 5, III Year; 19 hours per week; 8 weeks.
A laboratory course in organic preparations in the aromatic series; organic analysis.

100. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 6, III Year; 17 hours per week; 4 weeks.
A laboratory course in organic preparations.

101. ELECTROCHEMISTRY:—*W. L. Miller.*
Departments 5, 6, 7 and 8, III Year; 2 hours per week; first term.
A lecture course on elementary electrochemistry, illustrated by experiments.

102. ELECTROCHEMISTRY:—*W. L. Miller.*
Departments 5, 6, 7 and 8, III Year; 3 hours per week; first term.
A laboratory course in quantitative measurements to accompany Course 101.

103. INORGANIC CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on chemical theory.

104. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on advanced organic chemistry.

105. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 5 and 6, IV Year.
A laboratory course in advanced organic chemistry.

106. INDUSTRIAL CHEMISTRY:—*W. H. Ellis, J. W. Bain.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on selected subjects in chemical technology.

107. INDUSTRIAL CHEMISTRY:—*W. H. Ellis, J. W. Bain.*
Departments 5 and 6, IV Year; about 28 hours per week; both terms.
A laboratory course in industrial problems.

108. ELECTROCHEMISTRY:—*W. L. Miller.*
Departments 5, 6 and 7, IV Year; 2 hours per week; both terms.
An advanced lecture course on the theory of solutions and electrolysis, and the application to the practice of electro-deposition and electrolytic refining of metals. The course also includes lectures on the electric furnace with special consideration of efficiency.
Text books:—Electrometallurgy—Borchers; Electrochemistry—Le Blanc; Electrochemistry—Luepke.

109. ELECTROCHEMISTRY:—*W. L. Miller.*
Departments 5, 6 and 7, IV Year; about 28 hours per week.
A laboratory course accompanying Course 108.

110. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on the composition and examination of air, water and food; poisons and their detection.

111. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, IV Year.
A laboratory course accompanying Course 110.

112. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Department 2, IV Year, 12 hours per week; first term.
A laboratory course comprising analysis of ores and furnace products.

113. SANITARY CHEMISTRY:—*H. M. Lancaster, E. G. R. Ardagh.*
Department 1, IV Year.
A lecture and laboratory course of about 16 hours per week for one term on water supply and sewage disposal.

DESCRIPTIVE GEOMETRY AND DRAWING.

115. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
Departments 1, 2, 3, 6 and 7, I Year; 1 hour per week; both terms.
This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solutions of problems relating to straight lines and planes.

116. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 4, I Year; 1 hour per week; both terms.

This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solution of problems relating to straight lines and planes, special reference being made to the determination of shades and shadows.

117. DRAWING:—*J. R. Cockburn.*

Departments 1 and 2, I Year; about 16 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; the plotting of original surveys; measured drawings.

118. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell.*

Department 4, I Year; about 15 hours per week.

Copying from the flat, lettering, topography, freehand drawing in black and white, both from copies and models; the graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings. Elements and principles of Architecture.

119. DRAWING:—*J. R. Cockburn.*

Department 5, I Year; about 9 hours per week.

Copying from the flat, lettering, measured drawings.

120. DRAWING:—*J. R. Cockburn.*

Departments 3, 6 and 7, I Year; about 20 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings.

121. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Departments 1, 2, 3, 6 and 7, II Year; 1 hour per week; both terms.

This course of lectures is a continuation of the work taken in the first year with the following additions: Problems relating to curved surfaces, principles of shades, shadows and perspective.

122. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 4, II Year; 1 hour per week; both terms.

This course of lectures is a continuation of the work taken in the First Year with the addition of problems relating to curved surfaces, shades, shadows and perspective.

123. DRAWING:—*J. R. Cockburn.*

Departments 1 and 2, II Year. Department 1, about 14 hours per week. Department 2, about 7 hours per week; both terms.

Colouring and shading as applied to both topographical and construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

124. DRAWING:—*J. R. Cockburn.*

Departments 3 and 7, II Year; about 15 hours per week; both terms.

Colouring and shading as applied to construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics, theory of mechanism and strength of materials; measured drawings; elementary design.

125. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell.*

Department 4, II Year; about 18 hours per week; both terms.

Freehand drawing including monochrome and colours; exercises from the orders of architecture; principles of shades, shadows and perspective; elementary architectural design; problems in descriptive geometry relating to solids bound by curved surfaces; solution of problems in optics and strength of materials; measured drawings.

126. DRAWING:—*J. R. Cockburn.*

Department 6, II Year.

Same as Department 3, with exception that theory of mechanism is not included.

127. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 1, III Year; 1 hour per week; one term.

This course of lectures deals with spherical projections, the principles of mapmaking, and the graphical solution of spherical triangles.

128. DRAWING:—*J. R. Cockburn, C. R. Young.*

Department 1, III Year; about 12 hours per week.

Principles of mapmaking, spherical projection, plotting of original surveys relating to topographical and railway work; problems in theory of construction; original design of various structures; measured drawings.

129. DRAWING:—*J. R. Cockburn.*

Department 2, III Year; 4½ hours per week.

Plotting of original surveys, relating to topographical and railway work and mining; problems in theory of construction; original design; measured drawings.

130. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell, C. R. Young.*
Department 4, III Year; about 16 hours per week, first term; 22 hours per week, second term.
Advanced work in monochrome and colours; problems in shades, shadows and perspective; architectural design; problems in theory of construction, including framed structures.

131. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
Department 4, III Year; 1 hour per week; first term.
Advanced work in shades, shadows and perspective.

132. DRAWING:—*J. R. Cockburn, C. R. Young.*
Departments 2, 3 and 6, III Year; 3 hours per week; both terms.
Problems in design dealing with the theory of structures.

ELECTRICITY.

135. MAGNETISM AND ELECTRICITY:—*H. W. Price.*
Departments 3, 5, 6 and 7, I Year; 2 hours per week; first term.
A course of lectures on general principles relating to magnetism, electricity, electromagnetism, electrostatics, etc., illustrated largely from engineering apparatus.
Text book:—Elementary Electricity and Magnetism—S. P. Thompson.

136. ELECTRIC CIRCUITS:—*W. S. Guest.*
Departments 3, 5, 6 and 7, I Year; 2 hours per week; second term.
This course of lectures concerns chiefly fundamental principles relating to electric circuits, and leads to consideration of such problems as the distribution of electric energy through lines and networks and the division of load between generators.
Text book:—Electrical Problems—Hooper and Wells.

137. ELECTRICITY:—*W. S. Guest.*
Departments 3, 5, 6 and 7, I Year; 3 hours, alternate weeks; both terms.
A laboratory course of experiments, given in logical order, designed to demonstrate fundamental principles in connection with the generation and flow of currents in electric circuits. The work is associated with the lecture courses, magnetism and electricity, and electric circuits (135, 136).

138. ELECTRICITY:—*T. R. Rosebrugh.*
Departments 3, 5, 6 and 7, II Year; 2 hours per week; both terms.

Deals with the theory of electrical measurements, and detailed study of various methods applicable under different conditions in engineering practice to the measurement of resistance, current, potential difference, power and energy; calibration of commercial measuring instruments. The effect of choice of conditions of measurement on the accuracy of the result is considered.

Text book:—Electrical Measurements—Carhart and Patterson.

139. ELECTRICAL LABORATORY:—*W. S. Guest.*

Departments 3, 5, 6 and 7, II Year; 2½ hours per week; both terms.

This laboratory course is closely associated with the lecture course 138 on electricity for the second year. The more important and useful methods of testing generators and circuits for electromotive force, resistance, current, grounds, etc., are practised, often under conditions such as occur in practice. The work also includes methods of calibration of measuring instruments for voltage, current, power and energy, and certain studies of properties of incandescent lamps.

140. ELECTRICITY:—*H. W. Price.*

Department 2, III Year; Departments 1 and 4, IV Year; 1 hour per week.

A course designed to fit the requirements of non-electrical students. A study of essential principles is followed by discussion of electrical apparatus plants, power transmission, railways, etc.

Text book:—Elementary Electricity and Magnetism—Jackson.

141. POWER:—*H. W. Price.*

Departments 2, 6 and 8, IV Year; 20 hours.

Under the name "Power" a number of operating experiments are arranged to afford some familiarity with measuring instruments and direct and alternating current machinery.

142. MAGNETISM AND ELECTRICITY:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 2 hours per week; both terms.

A course of lectures on theory of magnetism and magnetic circuits, theory of direct current generators, motors, etc.

Text book:—Elements of Electrical Engineering, Vol. I—Franklin and Esty.

143. ALTERNATING CURRENT:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 1 hour per week.

A first course of lectures on alternating current, covering principles of measurement and leading to the analytical and graphical treatment of the simpler problems relative to alternating current circuits and machinery.

Textbook:—Elements of Electrical Engineering, Vol. II—Franklin and Esty.

144. ELECTRICAL LABORATORY:—*T. R. Rosebrugh, H. W. Price.*

Departments 3 and 7, III Year; 6 hours per week.

This laboratory course is intended to afford the student an opportunity to become familiar with principles involved in continuous current shunt, series and compound wound generators and motors, and, to some extent, alternating current circuits and machinery. Other sections of the work deal with the magnetic properties of iron and steel, and study of iron losses in transformers and generators.

The course is arranged to stand in close relation to the lecture courses in the subjects of magnetism and electricity and alternating current (142, 143) for III Year, and to certain design work (145).

145. ELECTRICAL DESIGN:—*H. W. Price.*

Department 7, III Year; 1 hour per week.

A course of lectures dealing with design of electric machinery and plants, accompanied by designs to be worked out in the design room.

References:—Dynamo-electric Machinery—S. P. Thompson; Electric Machine Design—Parshall and Hobart.

146. ELECTRICAL DESIGN:—*H. W. Price.*

Department 7, III Year.

A design room is set apart for working out designs of electrical apparatus such as transformers, generators, motors, auxiliary apparatus, etc.

Special forms and notes are employed, arranged to suit the various studies. Certain models are provided to assist where necessary.

147. APPLIED ELECTRICITY:—*T. R. Rosebrugh.*

Department 7, IV Year.

This course deals by analytical and vector methods with the theory of alternating current circuits and machinery. Applications of theory are considered with regard to transformers, single and polyphase generators, synchronous motors and rotary converters, induction and commutating series motors, transmission lines, wave analysis, etc.

148. ELECTRICAL LABORATORY:—*T. R. Rosebrugh, H. W. Price, R. H. Hopkins.*

Department 7, IV Year, in connection with 147.

This laboratory course involves a thorough study of principles and properties of single and polyphase circuits and apparatus. Both vector and analytical methods are applied to the solution of problems based on tests made on laboratory machines.

The work deals mainly with constant voltage and constant current transformers, single and polyphase alternators, synchronous motors, rotary converters, induction and single phase commutating motors, transmission line, etc. The work does not consist only of factory tests, but is designed to lead the student to apply theory to practice as illustrated in the apparatus under test, with a view to an exact understanding of methods and an appreciation of limitations under many conditions. Free use is made of the oscillograph as a necessary device for "seeing" conditions under investigation. The best commercial measuring instruments are available.

GEOLOGY.

150. GEOLOGY (Elementary):—*A. P. Coleman.*

Departments 2 and 5, II Year; Department 1, III Year; 1 hour per week; both terms.

This course deals chiefly with historical geology with special reference to Canadian formations.

Reference books:—Introduction to Geology—Scott; Text Book of Geology—Dana.

151. ECONOMIC GEOLOGY. (Including Dynamical and Structural Geology):—*A. P. Coleman.*

Department 2, III Year; 2 hours per week; both terms. Department 1, IV Year.

A study of the more important economic rocks, minerals and ores with their geological associations. Special attention paid to Canadian deposits.

152. ADVANCED GEOLOGY:—*A. P. Coleman.*

Department 2, IV Year.

(A) *Pre-Cambrian Geology.*—An account of the Keewatin, Huronian and Laurentian rocks of Canada, with their distribution, structural relations and economic features, and briefer accounts of similar formations in the United States and elsewhere.

Works of Reference:—Reports of the United States and Canadian Geological Surveys, of the Bureau of Mines of Ontario, etc.

(B) *Pleistocene Geology.*—Lectures on the formation and distribution of the drift deposits of North America, with brief references to other regions. Glacial, Interglacial and Postglacial beds are described, changes of climate are discussed with their probable

causes, and the economic features of the clays, sands and gravels are pointed out. A weekly excursion is made during October and November to points of interest near Toronto, which is the centre of the most important development of Pleistocene in America.

(C) *Physiography.*—A course of lectures on the surface forms of the earth, with the geological factors which have produced them. The broad features of the earth, its plains, tablelands, hills, valleys, mountains, oceans, rivers and lakes are discussed in a general way, methods of topographical surveys and mapping are referred to, and the chief physiographic areas of Canada are described.

153. MINING GEOLOGY:—*A. P. Coleman.*

Department 2, IV Year; 1 hour per week; both terms.

A course of lectures on geological problems associated with mining, typical mining regions in Canada, the United States and elsewhere being discussed from the geological side.

Works of reference:—Mineral Industry and the books mentioned under (A).

154. GEOLOGICAL EXCURSIONS:—*A. P. Coleman.*

Department 2, IV Year.

Trips to points of interest in the vicinity of Toronto.

155. ORE DEPOSITS:—*A. P. Coleman.*

Department 2, III Year; 1 hour per week; both terms.

Discussion of the origin and classification of ore deposits in a general way, the mode of occurrence of the chief metals, and statistics of production, special attention being given to the metals mined in Canada.

156. ECONOMIC GEOLOGY:—*W. A. Parks.*

Department 2, III Year; 1 hour per week; both terms.

Laboratory work on ores, manner of occurrence, vein structure, etc. Geological maps of typical mining regions.

MINERALOGY.

157. ELEMENTARY MINERALOGY:—*J. E. Thomson.*

Department 5, I Year; Department 2, II Year; 2 lectures per week; first term.

After introducing the student to the chief chemical, physical and crystallographic characteristics of minerals, the course becomes descriptive and deals with about one hundred of the minerals most important from the industrial or scientific point of view.

Text books:—Minerals and how to study them—Dana; Text Book of Mineralogy—Dana.

158. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*

Department 5, I Year; 4 hours per week, first term; 3 hours per week, second term.

Introduction to blow-pipe analysis, determination of minerals by inspection and physical tests.

Text books:—Text Book of Mineralogy—Dana; Mineral Tables—Eakle; Determinative Mineralogy and Blow-Pipe Analysis—Brush-Penfield.

159. PRIMARY MINERALOGY:—*A. L. Parsons.*

Department 1, II Year; 2 hours per week; first term.

A very brief introduction to the study of minerals and rocks.

Text books:—Minerals and how to study them—Dana; Handbook of Rocks—Kemp.

160. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*

Department 2, II Year; 1 hour per week, first term; 3 hours per week, second term.

Determination of minerals by inspection and by means of physical tests; introduction to blow-pipe practice.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy and Blow-pipe Analysis—Brush-Penfield.

161. MINERALOGY:—*T. L. Walker, A. L. Parsons, J. E. Thomson.*

Department 1, II Year; 1 hour per week, first term; 2 hours per week, second term.

Determination of minerals by inspection and by means of physical tests; study of common rock types and their identification.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

162. MINERALOGY:—*A. L. Parsons.*

Department 5, II Year; 1 hour per week; second term.

Introduction to the study of rocks; determination of minerals and rocks by means of tables based on the physical properties.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

163. ELEMENTARY PETROGRAPHY:—*T. L. Walker.*

Department 2, III Year; 1 hour per week.

A course of lectures and laboratory work introducing the student to the macroscopic study of rocks.

Text books:—Handbook of Rocks—Kemp; Rocks and rock minerals—Pirsson.

164. MINERALOGY:—*T. L. Walker.*

Department 2, III Year; 2 hours per week.

Determination of minerals by means of the blow-pipe and physical properties.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy and Blow-pipe Analysis—Brush-Penfield.

165. GENERAL PETROGRAPHY:—*T. L. Walker.*

Department 2, IV Year. 1 hour per week, first term; 2 hours per week, second term.

Study of the chief rock-forming minerals and of some phases of petrography not covered in the course of the previous year.

166. PETROGRAPHY:—*T. L. Walker.*

Department 2, IV Year; 2 hours per week; both terms.

Study of the chief rock-forming minerals, of rocks in thin sections and in hand specimens.

Text books:—Rocks and Rock Minerals—Pirsson; Minerals in Rock Sections—Luquer.

167. CRYSTALLOGRAPHY:—*A. L. Parsons.*

Department 5, III Year; 1 hour per week.

A course devoted to lectures and practical work on the geometrical and optical properties of crystals, preparing the student for the study of rocks in thin sections and for the examination of crystallized substances, natural and artificial, under the polarizing microscope.

MINING, ASSAYING AND ORE DRESSING.

170. MINING:—*H. E. T. Haultain.*

Department 2, II Year; 1 hour per week; second term. Department 8, II Year; 1 hour per week; both terms.

An introduction to the study of mining and ore dressing methods.

171. MINING AND ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*

Department 2, II Year; 3 hours per week; second term.

Introductory work with rock-drills and various ore dressing appliances.

172. MINING:—*H. E. T. Haultain, F. C. Dyer.*

Departments 2 and 8, III Year; 1 hour lecture per week, both terms; 3 hours' laboratory work per week, one term.

General mining methods.

173. ASSAYING:—*H. E. T. Haultain, R. B. Stewart.*
Departments 2, 5 and 6, III Year; 1 hour lecture per week, one term; 3 hours' laboratory work per week, both terms.
Assaying of various ores for gold, silver, lead and copper.

174. ASSAYING:—*H. E. T. Haultain, R. B. Stewart.*
Department 2, IV Year; 1 hour lecture per week, one term; 3 hours' laboratory work per week, one term.
Continuation of the work of III Year.

175. MINING:—*H. E. T. Haultain.*
Department 2, IV Year; 1 hour lecture per week; both terms.
Special mining methods, examinations, reports.

176. MILLING:—*H. E. T. Haultain, F. C. Dyer.*
Department 2, IV Year; 3 hours' laboratory work per week; both terms.
Advanced work with ore dressing appliances, complete mill tests.

177. ORE DRESSING:—*H. E. T. Haultain.*
Departments 2 and 8, III Year; 1 hour per week; both terms.

179. ORE DRESSING:—*H. E. T. Haultain.*
Department 2, IV Year; 1 hour per week; both terms.

METALLURGY.

180. METALLURGY:—*G. A. Guess.*
Departments 2, 5 and 6, IV Year; 1 hour per week; both terms.
Advanced studies in the metallurgy of gold, silver, copper and lead, etc.

181. FERRO-METALLURGY:—*T. R. Loudon.*
Departments 1, 2, 3, 5, 6 and 7, III Year; 1 hour per week; both terms.
The physical properties of iron and steel and the circumstances that influence the strength, etc., of iron. The different modes of manufacture of iron and steel and the effect of different processes of making on the resulting products; explanations of specifications for iron and steel adopted by engineers.

182. METALLURGY:—*G. A. Guess, W. S. Bishop.*
Department 2, IV Year; 6 hours' laboratory work per week; second term.
Calibration of pyrometers, blast furnace smelting and copper converting, cyanidation, acid leaching of copper ores, electrolytic refining of lead and copper, electrometallurgy.

183. METALLURGY:—*G. A. Guess, W. S. Bishop.*
Departments 2, 5 and 6, II Year; 1 hour per week; one term.
An introduction to the study of general metallurgy.

184. METALLURGY:—*G. A. Guess.*
Departments 2, 5 and 6, III Year; 1 hour per week; both terms.
General metallurgy of gold, silver, lead and copper.

185. METALLURGY:—*G. A. Guess.*
Department 8, II Year; 1 hour per week, first term, 2 hours per week; second term.
A lecture course in the study of metallurgical fuels, their use, preparation, calorific value and temperature of combustion; introduction to the study of metallurgical processes. Problems.

186. METALLURGY:—*G. A. Guess.*
Department 8, III Year; 1 hour per week; first term; 4 hours per week; second term.
The uses, properties and metallurgy of the metals except iron, with special reference to copper, nickel, lead and zinc. The study of clays and their industrial uses. A laboratory course of 100 hours.

186*a*. METALLURGY:—*G. A. Guess, W. S. Bishop.*
Department 8, IV Year; 2 hours per week, both terms, and nine hours' laboratory work, both terms.
Lixiviation of copper ores, design and organization of plants, metallurgical book-keeping, metallurgical balance sheets, thermal balance sheets, electrometallurgy, electrolytic refining processes, a particular study of Canadian problems.

MATHEMATICS.

187. ALGEBRA:—*A. T. DeLury.*
All Departments, I Year; 2 hours per week; both terms.
Simple equations of one, two and three unknown quantities; quadratic equations of one and two unknown quantities; elementary treatment of variation, proportion and progressions; interest forms and annuities, permutations, combinations, binomial theorem.
Text book:—Intermediate Algebra—DeLury.

188. ANALYTICAL GEOMETRY:—*A. Baker.*
All Departments, I Year; 1 hour per week; both terms.
The course in Elementary Analytical Geometry covers the more familiar propositions in connection with the straight line, circle, parabola, ellipse and hyperbola. The subject is treated so as to illustrate the general methods of analytical geometry.

189. TRIGONOMETRY, PLANE:—*M. A. Mackenzie.*

All Departments I Year; 2 hours per week; both terms.

Trigonometrical ratios with their relations to one another, sines, etc., of the sum and difference of angles with deduced formulæ, solutions of triangles, expressions of the area of triangles, radii of circumscribed, inscribed and escribed circles.

Text book:—Practical Trigonometry—Plane and Fawdry.

190. CALCULUS, DIFFERENTIAL AND INTEGRAL:—*S. Beatty.*

Departments 1, 2, 3, 4, 6 and 7, II Year; Department 5, II Year, optional; 2 hours per week; both terms.

This is an elementary course in the infinitesimal calculus, but adequate to afford a knowledge of the character and methods of the subject and to enable students in chemistry, engineering, etc., to understand such of their text books as introduce the calculus.

191. TRIGONOMETRY, SPHERICAL:—*L. B. Stewart.*

Department 1, II Year; 1 hour per week; first term.

A course of lectures includes the derivation of formulæ and their application to the solution of triangles and to practical problems.

Text book:—Spherical Trigonometry—Todhunter and Leatham.

192. LEAST SQUARES, METHOD OF:—*L. B. Stewart.*

Department 1, III Year; 1 hour per week; first term.

The course of lectures includes: The general principles of probability, the law of error, direct measurements of equal and different weights; mean square and probable errors; indirect measurements; conditioned observations; applications to empirical constants and formulæ, etc.

Text book:—Least Squares—Merriman.

TECHNICAL PHYSICS.

195. ACOUSTICS:—*G. R. Anderson.*

Department 4, III Year.

Wave motion, propagation, reflection and transmission of sounds. Laws of vibrating strings, pipes and forks. Velocity of sound. Musical scales. Absorption of sound by various substances, use of deadening material in buildings. Amount of reverberation permissible and desirable in public buildings. Lectures and laboratory work, Fall term.

196. HYDROSTATICS:—*G. R. Anderson.*

All Departments, II Year.

Laws of fluid pressure and application to machines. Density of solids and fluids, theory of flotation.

Lectures and laboratory work, Spring term.

197. OPTICS:—*G. R. Anderson.*

All Departments, II Year.

Rectilinear propagation of light, illumination, photometry, light standards. Distribution of light by reflectors and diffusers, general and selective absorption, economic values of artificial lights.

Laws of reflection and refraction, theory of optical instruments.

Light considered as wave motion, dispersion, spectrum analysis, colour phenomena, polarization.

Lectures and laboratory work, Fall term.

198. HEAT:—*G. R. Anderson.*

Departments 1 and 5, III Year.

Generation and propagation of heat. General and industrial thermometry, calorimetry and pyrometry. Linear and cubical expansion, gas laws. Specific heat of solids, liquids and gases, latent heat of fusion and vaporization. Mechanical equivalent of heat. Carnot cycle.

Lectures and laboratory work, Fall term.

199. PHOTOGRAPHY:—*G. R. Anderson.*

Departments 1 and 4, III Year; Departments 3 and 7, IV Year.

The camera and its adjustments, lenses, shutters, screens. Plates for various purposes, films, prevention of halation. Lighting, exposure, development. Paper of various kinds, printing, enlargement and reduction, blue printing and allied processes. Record photography, photogrammetry and photo-surveying. Photography in colour.

Lectures Fall term, and laboratory work both terms.

SURVEYING.

205. SURVEYING:—*S. R. Crerar.*

Departments 1 and 2, I Year; 1 hour per week; both terms.

The lecture course includes the general principles; surveying with the chain, the compass and chain and the transit and chain; the applications of trigonometry to inaccessible heights and distances; mensuration of surfaces and solids, co-ordinate surveying, division of land, etc.

Text books:—Land Surveying—Gillespie; Theory and Practice of Surveying—Johnson.

206. FIELD WORK:—*S. R. Crerar.*

Departments 1 and 2, I Year; 9 hours per week; first term.

This course comprises testing chains; practice in chaining; a complete survey of a piece of land with the chain; keeping of field notes; the use of the compass and transit in surveying closed figures and traverse lines and in ranging straight lines; plotting by latitudes and departures, and otherwise computing areas.

207. SURVEYING:—*W. M. Treadgold.*

Departments 1 and 2, II Year; 1 hour per week; both terms.

This course of lectures takes up in detail, simple, reverse and compound curves as applied to railroad surveying. It also includes stadia, plane table and photographic surveying as applied to topographic work, and also the main features of mine and hydrographic surveying.

Text books:—Henck, Shunk, Searles, Allen (Field books for Engineers) Theory and Practice of Surveying—Johnson; Plane Surveying—Raymond.

208. FIELD WORK:—*W. M. Treadgold, E. W. Banting.*

Departments 1 and 2, II Year; 9 hours per week; first term.

This course of instruction embraces all adjustments of the transit, accurate determination of angles of closed figure, minor problems in triangulation—ordinary and special problems as applied to railroad work in regard to curves, simple, reverse and compound, profile levelling and plotting of profile.

209. SURVEYING AND LEVELLING:—*W. M. Treadgold.*

Departments 1 and 2, III Year; 1 hour per week.

This course of lectures takes up the work of the railroad engineer on construction, including profiles, cross sectioning, computation of volume of earthwork, overhaul, transition curves, laying out turnouts, frogs and switches, etc.

Also a discussion of trigonometric and barometric levelling.

Text books:—Field Engineering—Searles; Railroad Curves and Earthworks—Allen.

210. FIELD WORK:—*W. M. Treadgold, E. W. Banting.*

Departments 1 and 2, III Year; about 9 hours per week; first term.

This includes adjustments of levels and accurate check differential levelling, determination of profile, cross sectioning and computation of earthworth of located line on ground and plotting of same; also cross sectioning by use of hand level. A complete stadia topographic survey is made and plotted. The spiralling of curves on track already laid down and practical methods of locating and placing sidings and switches.

ADDITIONAL, FOURTH YEAR OPTIONS.

211. RAILWAY ENGINEERING:—*W. M. Treadgold.*

Department 1, IV Year; about 2 hours per week.

The object of this course is to make the student acquainted with the general principles of railroad and street railway engineering, and the subject will be studied from the standpoint of: economic theory of location; train resistance; effect of grade, distance and curvature and rise and fall; maintenance of way; yards and terminals; tunnels, and street railway practice.

212. FIELD WORK:—*W. M. Treadgold.*

Department 1, IV Year; about 11 hours per week; first term.

The work consists of an original survey for a railroad some one or two miles in length, the work being conducted according to the most modern methods of location. Upon the completion of this work a contour map of the district surveyed is plotted in the drafting room and a line adjusted to it. This is staked out in the field, profiles taken and complete estimates of the cost of construction made.

213. SANITARY ENGINEERING.

Sanitary Chemistry (113).

Advanced Biology (63*a*).

Bacteriology (64).

Hydraulics (32*b*).

Sanitary Engineering:—A lecture course of 1 hour per week, one term, in which consideration is given to the problems of water supply and sewage disposal as viewed by the engineer. Some practice in the design of works from assumed data is afforded.

Reference books:—Sewage Disposal—Kinnicutt, Winslow & Pratt; Sewage Disposal—Fuller; Water Supplies—Turneaure & Russell.

214. HIGHWAY ENGINEERING:—

Department 1, IV Year.

A lecture and laboratory course of about 8 hours per week, dealing with materials, design and construction of highways and pavements and the testing of various materials used in such work.

215. STRUCTURAL ENGINEERING:—

Students in Civil Engineering who desire to specialize in the subjects best fitting them for designing or constructing engineers on bridge-building or other analogous work, may do so by selecting the Structural Engineering Option in the fourth year. In addition to the obligatory subjects, the following lecture and laboratory courses are provided for those selecting this option:

Theory of Structures (16).

Strength and Elasticity of Materials (17).

Iron and Steel (23).

Reinforced Concrete (22).

Structural Design (51).

Mill Building Design (24).

216. ARCHITECTURAL ENGINEERING:—

Architectural students desiring to give special attention to the structural design of buildings may do so by electing to take the Architectural Engineering Option in the fourth year. The following subjects, in addition to those required of all students in the fourth year in Architecture, are required:

Structural Design (51).
Mill Building Design (24).
Architectural Design (48*a*).

MODERN LANGUAGES.

217. FRENCH:—*P. Balbaud.*

Required in Department 4, optional in Departments 1, 2, 3 and 7, I and II Years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

218. GERMAN:—*P. W. Mueller.*

Required in Departments 5 and 6, all years, optional in Departments 1, 2, 3 and 7, I and II Years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

THESIS.

219. THESIS.

Required in all Departments, IV Year.

Each student is required to prepare a thesis of between six thousand and seven thousand words on a subject approved by Council. See circular of information.

VACATION WORK.

220. CONSTRUCTION NOTES. See special circular of information.

OUTLINE OF VACATION WORK.

Construction Notes.

II and III Years.

The construction notes required consist of neat and complete dimensioned sketches in pencil of any structures, machines or plants which may be of interest. Any object chosen should be represented and dimensioned in such a manner that it could be completely constructed from the notes as the only available information.

From students in Department 2, who have been actually engaged during the summer with Government or other approved geological survey parties, geological field notes will be accepted in lieu of construction notes.

MASTER OF APPLIED SCIENCE DEGREE.

1. A candidate for the degree of Master of Applied Science (M.A.Sc.) shall hold the degree of Bachelor of Applied Science (B.A.Sc.) of this University.
2. He shall spend not less than one academic year in attendance as a student, in the Faculty of Applied Science, on a course of study approved by the Council.
3. He shall present a satisfactory thesis on a subject approved by the Council.
4. He shall pass such examinations as the Council may decide.
5. The candidate must register at the beginning of the academic year.

PROFESSIONAL DEGREES.

The attention of graduates is directed to the following regulations respecting professional degrees.

The following degrees have been established: Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem.E.), subject to the following regulations:

1. A candidate for one of the said degrees shall hold the diploma of the School of Practical Science or of the Faculty of Applied Science and Engineering and the degree of Bachelor of Applied Science except in the case provided for in clause 11 hereunder.
2. He shall have spent at least three years after receiving the degree of Bachelor of Applied Science in the actual practice of the branch of engineering wherein he is a candidate for a degree.
3. Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.

4. Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidate's professional experience for the purpose of clauses 2 and 3.

The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.

5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree, the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.

The candidate may be required at the option of the Examiners to undergo an examination in the subject of this thesis.

6. Notice in writing shall be sent to the Secretary not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Examiners.

7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Secretary not later than the first day of April.

8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Examiners.

9. The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.

10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the University.

11. Candidates who graduated from the School of Practical Science before June, 1905, shall not be required to hold the degree of Bachelor of Applied Science.

EXTRACTS FROM SURVEY ACTS.

From the Ontario Act Respecting Land Surveyors and Survey of Lands (R.S.O.).

"26. Any person serving as an apprentice as hereinbefore provided, may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practise as a land surveyor, but the total period of such apprenticeship and of course of study shall not exceed the

period of four years from the date of the articles of apprenticeship as above mentioned, and not less than three years of the said period of four years shall be passed in the actual service of a practising Ontario Land Surveyor.

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"28. The privilege of a shortened term of apprenticeship shall also be accorded to any graduate of the Royal Military College at Kingston or of the Ontario School of Practical Science in civil engineering or in mining engineering, or of the McGill College, Montreal, in civil engineering or in mining engineering, and such person shall not be required to pass the preliminary examination hereinbefore required for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor duly filed as required by section 32 of this Act, during twelve successive months of actual practice, after which, on complying with all the other requirements, he may undergo the examination prescribed by this Act.

"29. Such person at any time during his apprenticeship may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practise as a land surveyor, but the total period of such apprenticeship, and of course of study, shall not exceed the period of two years from the date of the articles of apprenticeship as above mentioned, and not less than twelve months of the said period of two years shall be passed in the actual service of a practising Ontario Land Surveyor."

From Act Respecting Manitoba Land Surveyors.

"28. (1) The privilege of a shortened term of apprenticeship shall be accorded to graduates of the Royal Military College of Canada and to graduates in civil engineering of the University of McGill College of Montreal, the School of Practical Science of Toronto, the School of Mining at Kingston, and graduates of Manitoba University who have taken first or second class honours in the special course in mathematics; and such graduates shall not be required to pass the preliminary examination hereinbefore prescribed for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor, duly filed as required by section 24 of this Act, during twelve successive months of actual practice of which at least six months shall be at actual practice in the field, after which, on complying with the other requirements of this Act, he may undergo the examination for commission to practise prescribed by this Act."

From British Columbia Land Surveyors' Act, 1905.

"52. Whosoever shall have followed, during at least two years, a regular course of studies in all the branches of the sciences required by law in order to be received as a land surveyor; who has attended the lectures of a British university or college where a complete course of theoretical and practical instruction is given in civil engineering, physics, and all other branches of sciences required by law in order to be admitted as a land surveyor, and who has received from such university or college, after a regular examination, his diploma or degree of a civil engineer or land surveyor, on satisfying the Board that he is duly qualified as aforesaid, may, without undergoing the examination for admission to the study of land surveying, be received as a student by any member of the Corporation practising in this Province, and shall be bound to perform only twelve months' actual service in the field as such, or, if he has obtained his degree or diploma as a civil engineer or land surveyor in less than two full years, then only such time of service which, added to the time he has devoted to his course of studies, shall complete the period of three full years; and, at the expiration of the said active service, such person, on complying with the other provisions of this section, shall have the right to present himself and undergo the examination required by law, and, if qualified, to be admitted to practise as a land surveyor for the Province as if he had served his three full years under his indentures with a practising land surveyor; but instead of paying fifty dollars he shall be obliged to pay sixty dollars as fees for his examination and commission as land surveyor."

The above section is to be taken collectively as a whole. No separate clause or sentence can be applied to any particular case.

From the Dominion Lands Act, 1908.

"Every graduate in surveying of the Royal Military College of Canada, and every person who has followed a regular course of study in all the branches of education required by this Act for admission as a Dominion land surveyor, for at least two years, in any college or university where a complete course of theoretical and practical instruction in surveying is organized, and who, after examination, has thereupon received from such college or university a diploma or certificate, shall be exempt from serving three years as aforesaid, and shall be entitled to examination for a commission after being admitted upon examination as aforesaid as an articled pupil and serving one year under articles with a Dominion land surveyor, including six months' actual practice with him in the field, on producing an affidavit from the said surveyor in said Form C, together with his own affidavit in said Form D, that he has served for one year as herein provided; but it shall rest with the Board to decide whether the course of instruction in such college or university meets the requirements of this section.'

EXTRACT FROM THE ONTARIO ARCHITECTS' ACT.

"Any student who has matriculated in Arts in any university in His Majesty's dominions, or in the Ontario School of Practical Science, shall not be required to pass the preliminary examinations.

"23. Any person who applies for admission to registration as an architect after the coming into force of this Act, shall not be less than twenty-one years of age, shall have served as a student not less than five years with a principal or principals entitled to register under this Act, or with any other principal or principals approved by the Council, and have passed such qualifying examinations as may be required by this Act.

"24. (3) Any person who has graduated from the Ontario School of Practical Science shall be required to serve only three years as a student, one of which three years may be served during the vacation of such school.

"(4) Upon and after the passing of this Act, students shall serve such term as is required to be served by the provisions of this Act, under indenture to a registered architect, which indenture and any assignment thereof with affidavit of execution thereto attached shall be filed with the Registrar upon payment of such fees as the Council may by regulation direct."

LABORATORY EQUIPMENT.

THERMODYNAMIC AND MECHANICAL LABORATORY.

The University in 1909 completed the erection of a large, well-equipped building for the accommodation of the steam, gas, mechanical and hydraulic laboratories. A more complete description of the laboratories has been published elsewhere, so that the present description is only intended to give the main features.

The part of the building set apart for thermodynamics and other mechanical work is the ground floor of a room 60 ft. × 155 ft. This room is lighted entirely from the roof in a very perfect way. A part of the space 40 ft. wide running the entire length of 155 feet is served by a 3-ton travelling crane and contains the following equipment:

50 h.p. Brown engine with separate jackets on both heads and barrel of cylinder.

Two-stage Rand air compressor having compound steam cylinders, each fitted with Meyer cut-off gear. The low pressure air cylinder has Corliss inlet gear.

30 h.p. high-speed Leonard tandem compound engine with shaft governor.

15 h.p. high-speed McEwen engine.

75 h.p. two-line compound Willans engine.

15 h.p. DeLaval turbine with special nozzles for condensing and non-condensing tests.

Two 15 h.p. Leonard engines with different types of valves, which are used for valve setting.

There are also two surface condensers with air pumps so arranged that any engine in the laboratory may be made to exhaust into the atmosphere through an open heater or into one of the condensers, the change from one arrangement to the other being accomplished in a few minutes without the aid of valves.

The laboratory further contains:

A 3-ton York refrigerating machine with tanks.

An Amsler transmission dynamometer.

Apparatus for testing injectors and steam pumps.

Numerous other pieces of apparatus and instruments.

The work on internal combustion engines and producers is performed on the following:

18 h.p. Canada suction gas producer.

14 h.p. National gas engine arranged for various compressions and points of ignition.

10 h.p. Fielding and Platt engine for city gas or coal oil, having various adjustments.

8 h.p. Otto gas engine.

6 h.p. marine gasoline engine.

Ericsson air engine.

Various accessories to above machines.

Steam for the laboratory is supplied by two 50 h.p. and one 100 h.p. Babcock and Wilcox boilers, the latter having an internal superheater. These boilers are located in a separate boiler room. They are used for experimental work only and are fitted up for testing. The gases pass up through two independent chimneys, and these have been arranged so that the draft and other conditions in the chimney at any point of its height may be examined.

In smaller work-rooms off the main laboratory are placed belt and oil testing machines, apparatus for testing the efficiency of gears and machines, and for experiments in the balancing of machinery.

HYDRAULIC LABORATORY.

The hydraulic laboratory occupies two floors each 40 feet x 112 feet, which are well lighted by large windows on the side and end.

The water for the experimental work is pumped through the various pieces of apparatus from a well by means of two turbine pumping units, both of which are driven by a Belliss and Morcom compound engine of 125 h.p. running at a speed of 525 revs. per minute. Both engine and pumps have been installed with a view to using them in experimental work as well as for supply of water for other apparatus used in the laboratory.

The pumping units are capable of delivering one cubic foot of water per second against heads of 250 feet and 300 feet respectively. These units are designed and connected up so that they may be run in series giving the above discharge at 550 feet head or they may be run in parallel giving double the discharge at a lower head. Each pumping unit consists of two two-stage pumps mounted on a common base and driven by a single pulley, and the construction and piping are such that each two-stage pump may be driven separately or that all may be driven at once, discharging separately one cubic foot per second at about 125 feet head through each of four independent pipes, or else the pumps may be run in series or in parallel. The scheme is thus well adapted to laboratory work, and under the heads used on reaction turbines about six cubic feet per second may be obtained.

The laboratory further contains a large vertical steel tank 5½ feet diameter by 34 feet high with arrangements for the attachment of nozzles and other mouthpieces, etc. Connections are also arranged for reaction turbines, the tank acting as a reservoir.

The discharge from the turbines or nozzles is measured in a weir tank nearly 6 feet wide and 21 feet long, containing a contracted weir 4½ feet wide. This weir may be calibrated by two weighing tanks, each having a capacity of about 240 cubic feet.

There are three reaction turbines and two impulse wheels all ready for experiment, the power being measured by brakes and the water by weir or orifices. Amongst the reaction turbines may be mentioned the one designed and built by Escher Wyss & Co., specially for the laboratory.

Smaller orifice and weir tanks, each about 3 x 3 x 12 feet with necessary measuring tanks, are arranged for instruction in coefficients of various kinds and practice with weirs and orifices.

A Venturi meter and other meters, also an hydraulic ram and similar devices are available for testing, and good facilities have been arranged for investigating friction and other properties of pipes and fire hose.

For special investigations on turbine and centrifugal pumps, other pumps in addition to those already described have been arranged.

The basement of the laboratory contains an open trough 5 feet wide, about 110 feet long, with a large weir at one end. It is intended to use this trough for experiments on the flow in open channels, for measurements of large discharges by means of the weir, and for experiments with current meters and Pitot tubes.

Numerous pieces of smaller apparatus, together with all instruments required, have also been provided, and the laboratory equipment is believed to be very complete.

DONATIONS TO THE THERMODYNAMIC AND HYDRAULIC LABORATORIES.

The following donations to the equipment of the laboratories have been made through the kindness of those mentioned :

50 h.p. Wheeler Surface Condenser, presented by Mr. F. M. Wheeler, New York.

Blake Feed Pump, presented by the manufacturers.

6-inch New American Turbine, presented by Wm. Kennedy & Sons, Owen Sound, Ont.

Two Crown Water Meters, presented by the National Meter Co., New York, through Mr. M. Warnock, Toronto.

Rock Drill, presented by Sullivan Machinery Co., New York, through Mr. A. E. Blackwood, '95.

Marine Gasoline Engine, presented by Canadian Fairbanks Co., Montreal.

Two engines with different types of valve, presented by Messrs. E. Leonard & Sons, London, Ont.

Bundy trap from American Radiator Co., through Messrs. Russell & Gifford.

Dunham steam trap from C. A. Dunham Co.

Sectional models of valves from American Radiator Co.

Sectional model Mason Reducing Valve by Russell & Gifford.

Tanks, etc., by John Inglis Co. Pressure Fan from Sheldons Ltd., Galt.

In addition to the above, other firms have materially assisted by offering apparatus at or below cost price, among whom may be specially mentioned, The Canadian Rand Drill Co., Sherbrooke, Quebec.

PHYSICAL LABORATORIES.

The optical laboratory is equipped with Weinhold optical benches and accessories for determining the constants of mirrors and lenses and for demonstrating the construction and use of telescopes, field glasses, microscopes, etc. There is also a full equipment of optical instruments, including telescopes, microscopes, field glasses, comparators, spectrometers, level tester, photometers of various types, focometer, dynamometer, cathetometer, polariscope, projecting lanterns, etc.

The photographic laboratory is supplied with cameras for viewing, copying, enlargement and reduction, a spectroscopic camera and an electric blue printing machine and the necessary dark-rooms.

The hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balances, Jolly balance, Mohr's balance, hydrostatic press, vacuum pumps, gauges, etc.

The heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat, expansion apparatus, air thermometer, apparatus for verification of Boyle's law and pressure and boiling point curve, and for determination of the absolute expansion of mercury. Callendar's apparatus for determination of the mechanical equivalent of heat.

The acoustical laboratory is provided with sonometer, siren, forks ordinary and electric, Lissajous' and Melde's apparatus, organ pipes of various forms, manometric flame apparatus and a special equipment for work in architectural acoustics consisting of torsion chronograph, electropneumatic wind chest and standardized organ pipes and other accessories.

ELECTRICAL LABORATORIES.

Galvanometer laboratory.—The equipment of this laboratory is, in part, as follows: A set of D'Arsanval galvanometers conveniently located at tables about the laboratory, a set of resistance boxes for use with the same; measuring instruments, including ammeters, voltmeters, wattmeters, potentiometers and standard cells. Apparatus for the measurement of low resistance, including a ductor, and for high resistance, including a megger, several Carey Foster outfits and a Roller bond tester. There are also experimental lines for practice in locating faults, photometer outfits with rotating devices and various types of arc lamps.

Another room is fitted more especially for calibration of electrical instruments for alternating and direct currents. About one hundred and twenty portable measuring instruments are available for students' use, also standard instruments, including Weston laboratory standards, Kelvin balances and a Wolff potentiometer, with which the portable instruments may be compared.

Machine laboratory.—This laboratory, occupying two large rooms, contains twenty-five dynamos and motors varying in capacity from two to twenty kilowatts, adapted for experiments illustrating the properties of compound shunt and series dynamos and motors, arc machines, etc. Switch-boards, numerous rheostats, lamp racks, starting boxes, circuit breakers, flexible cables, brakes, torsion dynamometers, tachometers, etc., are available for use with the machines.

This laboratory also contains two 15 kw., 25 cycle and two special 15 kw., 60 cycle General Electric polyphase revolving field alternators direct driven by motors, two rotary converters of 10 kw. and 5 kw. capacity, a 7½ kw. General Electric polyphase induction motor with slip ring rotor, Westinghouse three phase squirrel cage induction motors, Wagner single phase motor, Westinghouse single phase series motor, Westinghouse alternator, and several three phase and single phase induction motors; also transformers, reactive coils, and other details, as in the direct current sections of the laboratory described above, for experiments on the properties of alternating currents and alternating current apparatus in general. A constant-current transformer with its load of six series arc lamps, a three-element oscillograph, for studying wave forms, a high potential transformer and a mercury arc rectifier may also be mentioned. The students are supplied with Weston, Westinghouse and Thomson portable instruments for measuring purposes.

A motor generator set is being installed, comprising a 65 h.p motor driving on the same shaft a 30 k.w. 110 volt d.c. generator and a 30 k.w. 60 cycle 110 volt alternator with direct connected enciter.

Magnetic laboratory.—A room is fitted with appliances for the study of saturation and hysteretic properties of samples of iron and steel, as well as a transformer for determining dielectric strength. The room also serves for exercise in winding models of direct current armatures, alternators, etc.

High potential transformer.—A 20 kw. transformer of 200,000 volts is being installed in a separate room.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the Chemistry and Mining building, on the first and second floors. The rooms are large and well lighted, and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accommodation for 112 students, each working space being supplied with water, gas and fume cupboard. The laboratory for quantitative analysis will accommodate 48 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 36 is provided for the students engaged in the study of technical chemistry; it is equipped with appliances for the preparation and testing of chemical products. A laboratory for fourth year students with accommodation for eight workers has just been fitted up. Each of these laboratories has its own balance room adjoining, furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis, and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. A calorimeter room has been equipped in the basement. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

ELECTROCHEMICAL LABORATORIES.

The Electrochemical laboratories which are situated in the Chemistry and Mining building are provided with special facilities for electrolytic work, including a large storage battery and electroplating dynamo with tanks as well as a complete set of apparatus and electrical measuring instruments. The experimental work on electric furnaces is performed in two rooms specially equipped for this purpose with rheostats and switchboard connections to a 120 kw. d.c. generator, which supplies the current required.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building. One has a floor space of 17 feet x 47 feet, and the other 28 feet x 37 feet. Adjoining each is a room 15 feet x 11 feet, with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances set on a concrete pier. Each of the laboratories contains a number of melting holes for crucible fusions, various gas furnaces both for crucibles and muffles, and two large brick muffle furnaces.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation room (19 feet x 13 feet) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

METALLURGICAL LABORATORY.

Space has been provided in the basement of the Chemistry and Mining building. The laboratory contains a small blast furnace, a copper converter, a Steele Harvey tilting crucible furnace; an American Gas Co. muffle roasting furnace, a Hoskins resistance furnace for high temperature work, a Revelation kiln for clays and refractories. Blast is provided by a Connersville blower driven by a variable speed motor. The laboratory contains tanks for electrolytic precipitation and refining and a furnace for the production of aluminum. Facilities are provided for the investigation of fuels and clays. There is a storage room for ores and supplies and a students' room with lockers, wash-bowls and a shower-bath.

MILLING AND CONCENTRATING LABORATORY.

A detached building, 72 feet x 70 feet in area, contains the milling and concentrating equipment. It is heated, lighted and supplied with power from the main building, and is divided into two parts. The greater part, with 72 feet x 53 feet floor space, and 22 feet high, contains the milling and concentrating equipment. The machinery for the former operations consists of a five-stamp battery erected on concrete foundations, Challenge ore feeder, amalgamating plates, Wilfley table, a clean-up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore. This is driven by a 15 horse power motor.

The concentrating part consists of a set of five revolving trommels for wet screenings, four three-compartment jigs, a trough classifier delivering three products, and two revolving buddles, Wilfley Slimer, Deister Slimer, Richard's Pulsating Classifier, Richard's Pulsating Jig, a Behrend Dry Concentrator, a dry sizer, besides experimental apparatus of various kinds for experimenting on the falling rates of ore particles, the settling of slimes, surface tension action in grease and flotation methods, etc. The waste products run to the same settling tanks as the tailings from the stamp battery. The ore is handled by a travelling crawl. All the machinery in this part is driven by a 10 horse power motor.

The lower floor has been fitted up for lixiviation work with apparatus for the treatment of sands and slimes, different types of filter press, vacuum plant agitators, etc.

The plant throughout is intended mainly for experimental purposes and is made of such a size that numerous experiments can be carried out on small quantities of ore. Tests can also be made on lots of one or two tons.

The other part of the milling building with 72 feet x 17 feet floor space and 15 feet high is divided into four separate rooms. The largest of the four rooms has an area of 476 square feet and is devoted to the crushing and pulverizing of the ores preparatory to their treatment in the milling and concentrating room. It is isolated in order to confine the dusty operations as far as possible to this one room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16 inches by 12 inches, platform scales for weighing ore, a jib crane, pulleys, buckets, etc., for handling the rock. An adjoining room contains a 30 h.p. motor for driving the machinery of the crushing department, and storage bins for ore, work bench, etc. Another room with 17 feet x 15 feet floor space is furnished with a magnetic separator of the Rowan-Wetherill type, driven by its own motor.

One room of the same size as the above remains available for future additions.

STRENGTH OF MATERIALS LABORATORY..

This laboratory is intended for the scientific and commercial testing of materials of construction such as iron, steel, timber, concrete and masonry.

It is supplied with the following:

An Emery 50-ton hydraulic machine, built by Wm. Sellers & Co., of Philadelphia, for making tests in tension and compression.

A 100-ton screw power machine, built by Riehle Bros., Philadelphia. It is designed for making tests in tension, compression, shearing and cross-breaking, and will take in posts 12 feet long and beams up to 18 feet in length.

A Riehle 10-ton screw power universal testing machine.

A Riehle 50-ton screw power universal testing machine.

A 15-ton single lever-machine, built by J. Buckton & Co., Leeds, England.

A torsion machine, built by Tinius Olsen & Co., Philadelphia, for testing the strength and elasticity of shafting. This machine will twist shafts up to 16 feet in length and 2 inches in diameter.

A hand power torsion machine of simple mechanical construction, specially designed for the testing of short shafts of a maximum diameter of one inch.

A Riehle transverse testing machine of 5,000 pounds capacity, adapted to specimens up to 48 inches in length.

A Riehle compressometer, with spherical seat attachment for the adjustment of specimens having slightly non-parallel faces. This compressometer will receive specimens up to 10 inches in length.

An Olsen compression micrometer of standard type.

A 20,000 pound Olsen, hand power, wire testing machine, specially fitted for testing wooden columns with both fixed and pivoted ends.

A Riehle abrasion cylinder, built to the standard required by the National Brickmakers' Association, adopted in 1901.

A Page Impact Machine for testing the toughness of road metals,

A diamond core-drlll for preparing specimens for the Page impact machine.

A two-cylinder Deval abrasion machine for testing the wear-resisting properties of road materials.

A Berry strain-gauge for spans of 3 inches and 8 inches.

A Nalder dividing engine. This may be used either for the precise division of scales or for the calibration of instruments intended for refined measurements.

A large number of extensometers of the usual degree of precision. These include the Bauschinger, Martens, Unwin, Ames, Riehle, Johnson, Henning (recording) and other types. In addition there are the usual scales, micrometers, telescopes and reflectors, voltmeters for the determination of metallic contact, and such other appliances as are necessary in the making of precise measurements.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labour. It is also supplied with the necessary appliances for making ordinary repairs and for making apparatus for special experiment and original investigation.

CEMENT TESTING LABORATORY.

This laboratory is fitted with all the ordinary moulds, sieves, balances, burettes, steaming and drying tanks, tables, and other appliances necessary in making the usual physical tests of a Portland cement. It is also supplied with completely equipped cabinets for individual work. In addition there are the following:

A Riehle 2,000 lb. machine fitted for either tension or compression.

A 2,000 lb. Riehle shot machine for tension.

A 2,000 lb. Fairbanks shot machine for tension.

A 1,000 lb. Olsen automatic shot machine fitted for tests in either tension or cross breaking.

An Olsen soapstone moist closet of modern design.

METEOROLOGICAL LABORATORY.

The department of surveying and geodesy is provided with all the ordinary field instruments, such as transits, levels, compasses, micrometers, sextants, planimeters, plane tables, tapes, chains, etc., with which is carried on the instruction in practical field operations as detailed elsewhere.

A small laboratory is also established in the basement of the observatory described below, containing the necessary instruments for the refined measurements of geodetic surveying; as, a standard yard and metre, a Rogers 10-foot comparator, an invar base measuring apparatus, a Kater's pendulum with vacuum chamber, a level trier, micrometer microscopes, etc.

The geodetic observatory in connection with this department is used for the instruction of students of the fourth year in taking observations for time, latitude, longitude, and azimuth by the precise methods used in connection with a geodetic survey. It contains a 10-inch theodolite and zenith telescope by Troughton & Simms; an astronomical transit instrument and an 8-inch theodolite by Cooke; an electro-chronograph; a Howard astronomical clock; a Dent sidereal break-circuit chronometer; arithmometers, etc.

GEOLOGICAL AND MINERALOGICAL LABORATORIES.

In the Chemistry and Mining building on College Street the University possesses a modern laboratory for Geology and Mineralogy.

Courses are given in laboratory work, especially in personal examination of type sets of rocks, fossils, minerals and crystal models. These laboratory exercises serve to illustrate the introductory didactic instruction.

For the encouragement of pure crystallography the laboratories are supplied with goniometers of the various types, crystal models, appliances for the cutting of oriental crystal sections and for the physical examination of the same. Practical petrography is carried on in rooms provided with type sets of rocks, both macroscopic and microscopic. Advanced students are taught to make thin sections of rocks and fossils and to study them microscopically. For students in Mining a laboratory course in the interpretation of geological maps and sections is provided. Typical mining regions are studied in detail and an opportunity is afforded for the examination of specimens illustrating economic geology.

The laboratory for the preparation of thin sections of rocks, minerals and fossils is provided with electric diamond saws and grinding appliances for the various types of work incidental to the preparation of thin sections and museum material.

A room is also provided for advanced work in cartography and geological surveying.

The departments possess 28 petrological microscopes and 5 of other types, so that it is now possible to provide advanced students with instruments and sets of thin sections for their own especial use. The blowpipe laboratory contains 156 lockers, especially designed for apparatus for students.

MUSEUM.

The Geological and Mineralogical Museum of the University is open to students of the Faculty of Applied Science from 9 to 5 p.m. throughout the year.

The Museum is situated in the south-east corner of the ground floor of the Chemistry and Mining building.

The collections are restricted to such material as may serve to illustrate the courses of lectures given to undergraduate students in the Faculty of Applied Science. There are accordingly contained in this museum only the commoner rocks, minerals, fossils and ores.

LIBRARY.

Rooms have been set apart in the Engineering and the Chemistry and Mining buildings for the housing of such periodicals and other literature of the University Library as is of special interest to the students of this faculty.

SOCIETIES.

THE ENGINEERING SOCIETY OF THE UNIVERSITY OF TORONTO.

Officers for 1912-1913.

President	J. E. Ritchie.
1st Vice-President	W. T. Curtis.
Vice-Pres. Civil & Archl. Secs	F. S. Rutherford.
" *Mechanical & Elec. Secs*	M. F. Verity.
" *Chemistry & Mining Secs*	G. M. Smyth.
Recording Secretary	I. M. Macdonald.
Corresponding Secretary	C. C. Rous.
Treasurer	H. R. MacKenzie.
Permanent Secretary	H. Irwin, B.A.Sc.
Curator	G. Rankin.
Fourth Year Representative	H. A. Hawley.
Third Year Representative	H. N. Macpherson.
Second Year Representative	T. W. Crane.
First Year Representative	F. J. Matthews.
Senior "Varsity" Representative	J. A. P. Marshall.

The Society meets every second Wednesday during the academic year. Papers are read, and discussions are held on engineering subjects. The Society publishes a pamphlet monthly during the year, containing the best papers read at the meetings. A supply department is conducted by the Society, on a co-operative plan, through which instruments, drafting supplies, stationery, etc., may be purchased at a low cost.

UNIVERSITY OF TORONTO ELECTRICAL CLUB, 1912-1913.

President	R. J. Allen.
Vice-President	R. G. Matthews.
Secretary-Treasurer	F. R. Sims.
Councillors	W. B. Buchanan. P. H. Mills. E. D. Courtice.

The Society meets every second Thursday evening during the academic year for the discussion of papers relating to mechanical and electrical engineering problems too technical for consideration in the Engineering Society. The membership is limited to members of the senior and final years.

THE INDUSTRIAL CHEMICAL CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers for 1912-1913.

Honorary President............................
Honorary Vice-President. ....
President.......................................
Vice-President.................................
Secretary.......................................
Treasurer.......................................
Fourth Year Representative....................
Third Year Representative.....................

The Industrial Chemical Club was organized in 1909 and consists of graduates and undergraduates of Departments 5 and 6. Its object is to promote the study of industrial chemistry and chemical engineering. Illustrated lectures preceded by an informal dinner and short musical program, are held fortnightly, and on the following day an excursion is made to one or other of the industrial chemical concerns located in the city or vicinity.

UNIVERSITY OF TORONTO ARCHITECTURAL CLUB, 1912-1913.

Honorary President	John M. Lyle.
President	B. R. Coon.
Vice-President	L. C. M. Baldwin.
Secretary	M. Denison.
Treasurer	J. M. Robertson.
Councillors	A. C. Wilson. K. C. Burness. F. A. Swinnerton.

ATHLETIC ASSOCIATION OF THE FACULTY OF APPLIED SCIENCE.

EXECUTIVE COMMITTEE, 1912-1913.

Honorary President	Prof. C.H.C.Wright.
President	J. J. Phillips.
Vice-President	D. B. Gardner.
Secretary-Treasurer	R. F. Davison.
Fourth Year Representative	O. Holden.
Third Year Representative	C. V. Perry.
Second Year Representative	E. H. Jupp.
First Year Representative	C. E. Gage.

The Athletic Association has full control over all athletic clubs using the name of the Faculty of Applied Science. The Executive Committee has power to suspend any one from the privileges of membership in the Association for any breach of its regulations, and controls the finances of all athletic clubs in the aforesaid Faculty. The annual membership fee of this Association is fifty cents.

No other moneys are collected for the support of athletics in the Faculty of Applied Science without the sanction of the Executive Committee.

RUGBY FOOTBALL.

The Mulock Cup, which was presented by Sir Wm. Mulock, M.A., LL.D., to the University of Toronto Rugby Football Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

RUGBY FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers for 1912-1913.

Honorary President	T. R. Loudon.
President	R. S. Bell.
Manager senior team	T. V. McCarthy.
Captain senior team	F. J. Mulqueen.
Manager junior team	J. P. Cavers.
Captain junior team	R. W. Catto.

ASSOCIATION FOOTBALL.

In order to encourage Association Football on the College campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

(Winners of Faculty Cup.)

Officers for 1912-1913.

Honorary President	Prof. P. Gillespie.
President	E. H. Bedard.
Manager of Seniors	W. H. McTavish.
Captain of Seniors	C. A. Bell.
Manager of Juniors	C. Macdonald.
Captain of Juniors	G. Gray.

HOCKEY.

The trophy which is competed for annually among the Colleges in hockey is known as the Jennings Cup, and is the gift of the late W. T. Jennings, Mem. Inst. C.E.

HOCKEY CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers for 1912-1913.

Honorary President	C. R. Young.
President	A. M. German.
Manager senior team	W. J. Miller.
Manager junior team	D. B. Gardner.

UNIVERSITY CURLING CLUB.

Officers for 1912-1913.

Honorary President	Robt. A. Falconer.
President	A. D. LePan.
Vice-President	W. A. Kirkwood.
Secretary-Treasurer	H. Irwin.
Graduate Representative	C. R. Redfern.
School Representative	J. F. Young.
Arts Representative	F. C. Law.

TRACK CLUB.

Officers for 1912-1913.

Honorary President	Prof. L. B. Stewart.
President	J. J. Phillips.
Secretary-Treasurer	C. V. Perry.
Fourth Year Representative	E. A. Twidale.
Third Year Representative	W. A. Steel.
Second Year Representative	H. D. Wallace.
First Year Representative	To be elected.

OFFICERS OF THE 2nd FIELD COMPANY CANADIAN ENGINEERS.

Officer Commanding	Major S. P. Biggs.
Captain	T. C. Irving.
Lieutenant (Acting Adj.)	S. H. Fellowes.
Lieutenant	G. M. Bramfitt.
Lieutenant	E. Peplar.
Medical Officer	J. W. Barton, M.D.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION.

Directorate.

Honorary President	R. A. Falconer, D.Litt., LL.D.
President	Prof. C. H. C. Wright.
Vice-President	C. Sifton.
Secretary-Treasurer	W. E. Poupore.

Directors.

J. Maynard.
Dr. W. B. Hendry.
M. Laird.
M. Brock.
G. B. Taylor.
B. Frith.

The Athletic Association is now the paramount body in University athletics and has entire jurisdiction over the athletic clubs using the University name, and over their finances, members and policy, subject to the University authorities. Henceforth no financial agreement can be entered into by any such club without the sanction of the Directorate. No expenditure of any kind in connection with any such club can be made without the written order of the Secretary-Treasurer of the Directorate.

BASKETBALL CLUB.

Season 1912-1913.

Honorary President	Prof. J. McGowan.
President	E. A. Twidale.
Manager of Seniors	G. M. Carrie.
Manager of Juniors	T. S. Graham.

FACULTY OF APPLIED SCIENCE.
YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Y.M.C.A. of the Faculty of Applied Science was organized January 27th, 1905, and forms an integral part of the University of Toronto Y. M. C. A., which is a Federation of the associations of the various Colleges and Faculties of the University. The object of the Association is to develop a true Christian manhood and to help the students in whatever way possible.

Honorary President	J. Roy Cockburn, B.A.Sc.
President	A. J. Wright.
Vice-President	P. L. Fancher.
Treasurer	G. C. Storey.
Recording Secretary	B. C. Tomlinson.

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the University, at a cost of from four dollars and a half a week upwards for comfortable lodging with board; or rooms may be rented at a cost from one dollar and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

UNIVERSITY RESIDENCES.

By the generosity of Mr. and Mrs. E. C. Whitney and other friends, the University can now offer to some hundred and fifty men the peculiar advantages of residential life and excellent accommodation within its own grounds. The Residence, opened in November, 1908, consists of three Houses situated on the north side of Hoskin Avenue, opening upon a quadrangle, the fourth side of which is formed by Devonshire Place. They stand about two hundred yards to the north of University College and of the University Dining Hall and close to the University Gymnasium and Athletic Field. The buildings are known as the South, East, and North Houses.

Each House contains twenty-four single rooms, one single suite, one double room and eleven suites, a suite comprising a study and two bedrooms. A large room in each building, with an open hearth and a library, has been set aside as a common room. A lavatory with hot and cold shower baths is provided for every eight men. The buildings are heated by steam and lighted by electricity.

The University supplies the table, chairs, book-case, chiffonier, bed, mattress, pillows, linen, and window shades for each room; it is prepared to furnish a drop-light for a nominal rental.

Each occupant is charged $2.50 room-rent per week, payable to the Bursar four weeks in advance. The charge for each single suite is $3.50 per week. These charges cover heat, light, house-service, house-laundry, and the use of the telephone. There is no separate dining hall connected with the Residence, but board may be obtained at the adjacent University Dining Hall for $3.25 per week.

Applications for rooms must be made in writing to the Secretary of the Residence Committee (address the Registrar's Office) and must be accompanied by a deposit of $5.00. This deposit will be returned if the application be not granted or if the application be withdrawn in writing before September 8th. It will be returned in full at the end of the College year if the room key be given back and the room and furniture left in a satisfactory condition. The following principles govern the allotment of rooms: (i) No student, who as the result of the annual spring examinations is not assured of being able to proceed to the subsequent year, will be admitted into the Residence. (ii) The rooms in each House will be distributed proportionately between the various Faculties and Years. (iii) Rooms will be reserved for members of the incoming First Year until September 18th. (iv) Applications will be considered in order of priority.

The University lays down three general rules, designed to prevent hazing. the use of intoxicants and gambling. The students in each House shall elect a House Committee, which is entrusted by the University with the making and enforcing of any other needed rules and with the maintenance of order. A member of the Faculty resides in each House to act as friend and adviser to the men in residence.

GYMNASIUM AND ATHLETIC GROUNDS.

"The University gymnasium was completed and equipped in 1893. It is fully provided with the best and most modern appliances for physical culture, and contains a running track, shower baths and swimming bath. besides the necessary dressing rooms and other conveniences. A competent instructor in gymnastics is in constant attendance to superintend and direct the exercise of students. In addition to the lawn in front of the Main University Building and a campus in the rear, a large plot of ground on Devonshire Place has been set apart as an athletic field. By this addition the facilities for football, cricket, tennis and other outdoor athletic sports are doubled, as compared with previous accommodation; and by these grounds, in conjunction with the gymnasium, ample opportunity is afforded to all students for healthful exercise and physical development. To assist in meeting the expenses of the gymnasium, a nominal annual fee is imposed on those who avail themselves of its advantages. The supervision of all athletic matters has been entrusted by the Council to an Athletic Board, consisting of six members appointed from the Faculty and officers of the Athletic Association. All applications of clubs for the use of grounds must be made annually to this Board. All such applications must be accompanied by a list of officers. In the case of new clubs the list of officers must be accompanied by particulars as to the organization and objects of the club making application."

STUDENTS' UNION BUILDING.

"In 1894 additions were made to the front of the building in which the gymnasium is situated, consisting of a large hall for public meetings, a reading room and committee rooms. This additional accommodation is available for the work of the various students' societies, and for academic purposes. Applications for the use of rooms, accompanied by a list of officers and a copy of the constitution of the society making application, must be made, through the President, to the joint committee of the Councils on Gymnasium and Students' Union Building, at the beginning of the season, or from time to time as occasion requires. Arrangements have also been made by which recognized societies may obtain the use of committee rooms on application to the janitor of the Students' Union Building."

STUDENTS IN ATTENDANCE.

SESSION 1912-1913.

First Year.

7 Adams, N. R.......Brantford.
1 Allan, E. B...........Toronto.
6 Anderson, C. C.......Windsor.
7 Armstrong, R. K .....Oakville.
*1 Armstrong, T. E..Science Hill.
7 Armstrong, W. D. Owen Sound.
7 Babcock, H. A........Toronto.
1 Barnes, L. F........Hamilton.
3 Ball, F. S. W..........London.
1 Barr, D. P...........Toronto.
4 Bell, A. H...............Paris.
3 Bingham, S. B.......Hamilton.
5 Birrell, W. G........Pinkerton.
3 Bishop, J. M.........Toronto.
7 Booth, F. W..........Toronto.
6 Boyd, D..............Toronto.
3 Breuls, H. E..........Toronto.
*7 Brown, H. S..........Lansing.
1 Brown, R. R......Nelson, B.C.
7 Chapman, J. R...........Galt.
7 Cheney, S. K....Vankleek Hill.
*1 Colby, W. D.
*7 Cory, M....Medicine Hat, Alta
*1 Creamer, E. W.
Qu'Appelle, Sask.
7 Creamer, P. S.... Dawson, Y.T.
1 Crosby, E...........Toronto.
*7 Cross, R. A..........Hamilton.
7 Cumming, K............Eberts.
7 Cunningham, L. L.
Wauchope, Sask.
1 Dale, R. S...........London.
*7 Dandeno, L. G.
7 Daniel, T. A.........Ingersoll.
*1 Dashwood, G. R......Midland.
*1 Downie, R. W.....Melita, Man.
*1 Duggan, S. F......Schomberg.
1 Eastwood, J. H......Peterboro.
1 Edmonds, C. W.......Simcoe.
*7 Fallis, M. P...........Cadmus.
7 Flegg, R. L......Smith's Falls.
*7 Fraser, R. A.......Georgetown.
1 Gage, C. E..........Hamilton.
*1 Glover, T. S.
Southfield Hessle,
E. Yorkshire, England.
7 Grasett, H. A. M.......Barrie.
*3 Greatrex, W. K.......Toronto.
1 Groves, A. W.........Toronto.
7 Gurnett, E. G....Owen Sound.
1 Hagarty, D. G........Toronto.
1 Hagedorn, G. C.........Berlin.
*2 Hanmer, G.............Toronto.
*2 Hare, R. M...........Toronto.
7 Harkness, A. E.......Iroquois.
5 Head, H. B........St. George.
1 Hoag, C. K...........London.
4 Hoidge, R. T. C......Toronto.
*8 Hugill, O. H...Sault Ste. Marie.
4 Husband, L.........Hamilton.
1 Ingersoll, L. H.....Woodstock.
*3 Ives, V. E...........Colborne.
*1 Jackson, K. B.........Toronto.
*7 Johnson, M...........Clayton.
*7 Jones, R. E...........Toronto.
7 Kelleher, J...........Toronto.
*7 King, G. F............Simcoe.
*1 Kirby, J. R...........Toronto.
1 Kirby, R. W..........Toronto.
3 Kirn, R. W.........Peterboro.
*7 Klingensmith, C. R....Toronto.
6 Krug, S. J.............Chesley.
*4 Lapp, R. E...........Toronto.
1 Lee, L. A.............Toronto.
*7 Levesque, L...Chicoutimi, Que.
1 Levy, M..............Toronto.
7 Little, H. B...........Toronto.
*7 Macaulay, A. H.
Vancouver, B.C.
3 Macdonald, R. A.....Stratford.
1 MacInnes, R. M.
Winnipeg, Man.
2 McCrodan, B. A.....Belleville.
*1 McGinn, F............Toronto.
*7 McKinley, F. A.....Wyoming.
4 McLellan, T. W.....Harriston.

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* Non-matriculated.

*1 McPherson, F. T. Saskatoon, Sask.
*4 Marani, F. H. . . . . Toronto.
*1 Margeson, O. . . . . . Victoria, B.C.
*7 Martin, T. W. . . . Lawson, Sask.
2 Masson, D. M . . . . . . Dunnville.
*3 Matthews, F. J. . . . . London.
*3 Merry, F. S. . . . . Toronto.
1 Mitchell, B. . . . . London.
*1 Murdock, A. R. . . . . Toronto.
1 Newman, C. E. Winnipeg, Man.
2 Norton, F. W. . . Evanston, Ill.
1 Norwich, H. B. . . . . Toronto.
7 Nott, G. E. . . . . London.
1 O'Callaghan, E. A. . . Cornwall.
*7 Offerhaus, W. A. R. Armstrong, B.C.
6 Oliver, C. E. . . East Delta, B.C.
6 O'Reilly, W. H. . . . . Toronto.
3 Ormsby, J. A. N. . . . . . Toronto.
*7 Panter, J. S. . . . . Belleville.
7 Park, R. T. . . . . Peterboro.
1 Pfrimmer, V. R. . . . . . Stratford.
1 Pringle, J. E. . . . . Hamilton.
*5 Purcell, A. T. . . . . . . Wardsville.
7 Reed, H. . . . . Eglinton.
4 Rennie, G. C. . . . . Toronto.
1 Ritchie, W. W. . . . . Toronto.
1 Rogers, C. E. . . . . Toronto.
2 Rose, H. C. . . . . Guelph.
*1 Ross, S. R. . . . . Toronto.
3 Russell, J. P. . . . . Toronto.
7 Scott, T. A. . . . . Walkerton.
*1 Seaborne, R. L. . . . . Toronto.
1 Seaman, S. R. . . . . Chantry.
*1 Sievewright, R. L. . . . . Windsor.
*7 Smelser, W. A. . . . . Hamilton.
*1 Smith, E. E. . . Sault Ste. Marie.
*1 Smith, H. S. . . Saskatoon, Sask.
*7 Smithson, E. W. . . . . London.
*1 Smythe, C. . . . . Toronto.
*1 Snow, G. B. . . . . Toronto.
1 Speight, W. A. . . . . Toronto.
*1 Stark, W. H. . . . . Toronto.
7 Stevenson, C. W. G. . . . Guelph.
7 Sullivan, J. R. . . . . . Woodstock.
1 Sureda, J. A. Utuado, Porto Rico.
*4 Swinnerton, A. F. R. W. Toronto.
1 Taylor, M. S. . . . . Regina, Sask.
7 Tobin, K. E. . . . . . . Woodstock.
*7 Tudhope, R. . . . . Norwood.
3 VanEtter, A. . . . . Wardsville.
1 Walker, E. C. Richard's Landing.
2 Wallace, H. D. . . . . Toronto.
*1 Wallace, W. W. . . . . . Merritton.
1 Wallis, H. M. . . . . Peterboro.
1 Ward, R. C. . . . . Toronto.
3 Washington, H. A. . . . . Toronto.
*3 Waters, D. M. . . . . Belleville.
7 Watson, J. M. . . . . . Woodstock.
7 Weppler, H. S. . . . . Hanover.
7 Wells, A. R. . . . . Blyth.
7 Whaley, A. B. . . . . Toronto.
*7 Wilson, J. S. . . . . Kenora.
7 Wilson, R. H. . . . . . . Markham.
3 Youell, L. L. . . . Aylmer (West).
*2 Young, J. F. . . . . . . North Bay.

Second Year.

1 Adlard, L. S. . . . . Toronto.
2 Allan, W. N. . . . . Nelson, B.C.
1 Anderson, A. C. . . . . Toronto.
1 Arksey, G. A. . . . . Toronto.
2 Arthur, M. R. . . . . Sudbury.
1 Austin, F. D. . . . . Peterboro.
7 Ball, W. V. . . . . Toronto.
7 Banbury, T. R. . . . . Ingersoll.
7 Beacock, V. A. . . Edmonton, Alta.
1 Bennett, P. . . . . . . Calgary, Alta.
1 Beswick, R. C. . . . . Uxbridge,
1 Black, A. P. . . . . Toronto.
7 Bonus, W. H. . . . . Peterboro.
1 Buchanan, F. M. . . . . . Blenheim.
7 Budd, H. C. . . . . Clearville.
6 Breithaupt, J. E. . . . . Berlin.
5 Brodie, W. P . . . . Toronto.
1 Brouse, E. D . . . . Toronto.
1 Brown, H. R. . . . . Toronto.
1 Brown, L. . . . . Toronto.
5 Brown, N. B. . . . . Toronto.
1 Brown, W. G . . . . Acton.
4 Burden, H. J . . . . Toronto.
4 Burness, K. C . . . . Toronto.
2 Campbell, P. G. C. . . . Peterboro.
1 Cannon, F. J . . . . Toronto.
7 Carswell, J. M . . . . Toronto.
2 Carmichael, F. N. D. . . . Toronto.
4 Catto, R. W. . . . . Toronto.
7 Cavers, J. P. . . . . Toronto.
7 Chandler, F. H. . . . . . . Stratford.
1 Cockburn, G. A. . . . . Toronto.

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* Non-matriculated.

1 Cockburn, R. M.......Toronto.
7 Code, W. W..........Toronto.
1 Cook, J. D............Toronto.
1 DaCosta, W. R........Toronto.
1 Crealock, A. B.........Toronto.
3 Cunningham, J. N. Moose Jaw, Sask.
1 Daniel, N. H........Port Hope.
7 Davey, C. G...........London.
7 Davidson, G. P........Toronto.
4 Davidson, J. J.........Toronto.
7 Dean, W. A...........Toronto.
1 DeGruchy, P. C........Toronto.
3 Delisle, L......Chicoutimi, Que.
4 Denison, M...........Toronto.
1 Deverall, E. V.........Toronto.
7 Dibblee, J.............Toronto.
1 Dickson, W. L.......Brantford.
7 Dobbin, C. W........Waterloo.
1 Dobbin, W. L.........Toronto.
1 Downey, G. A..........Orillia.
4 Edwards, G. R........Toronto.
7 Elliot, R. V...........Norwich.
2 Emmerson, E. R....Port Arthur.
1 Evans, A. C..........Oakville.
1 Falconer, H. S.......Shelburne.
5 Feather, S. H........Brantford.
7 Fleming, A............Toronto.
1 Fraser, W. R.........Brantford.
1 French, W. G.........Toronto.
1 Fulton, W. J..........Toronto.
1 Gaboury, L. F.........Toronto.
1 Galbraith, R. D.......Toronto.
1 Gardner, D. B.........Toronto.
1 Geale, C. N.........Peterboro.
6 Glass, L. G............London.
1 Gooderham, G. A......Toronto.
7 Gould, W. H. R.......Uxbridge.
4 Graham, T. S..........Toronto.
1 Grange, E. R..........Toronto.
1 Gray, G. S............Meaford.
3 Gray, J..........Victoria, B.C.
1 Gurofsky, M..........Toronto.
2 Haas, M. S............Toronto.
2 Hall, W. T............Toronto.
2 Hanlon, J. E............Arkell.
1 Harris, R. W..........Ingersoll.
1 Hastings, C. E.........Toronto.
1 Hayward, C............Toronto.
1 Hewson, R. R..........Toronto.
5 Hicks, F. F......Newtonbrook.
2 Higgins, L. T..........Toronto.
1 Hogarth, C. E........Hamilton.
7 Hopkins, H. P.......Burlington.
7 Hubbert, S. J..........Toronto.
7 Ireland, T. P.........Hamilton.
7 Ironside, G............London.
1 Irwin, W. E..........Stratford.
1 Jackson, C. W. H.....Coboconk.
7 Jefferson, K. A....Arcola, Sask.
1 Johnson, G. W. F. Lethbridge, Alta.
2 Jones, R. D...........Toronto.
1 Jupp, E. H.............Orillia.
7 Karn, H. C.........Woodstock.
7 Keys, C. R.......Newark, N.J.
3 Kidd, W. S....Burritt's Rapids.
5 Kohl, H..............Toronto.
4 Korn, N. H...........Toronto.
1 Laidlaw, R. E.........Durham.
7 Lawrence, G. W. Port Dalhousie.
3 Lloyd, R. H.........Wingham.
1 Lockhart, W. E......Newcastle.
1 Lye, R. G.............Toronto.
2 Macaulay, G. B........Murray.
5 Macdonald, G. G......Toronto.
2 Macdonell, I. M.......Toronto.
7 Macfarlane, A. H..Victoria, B.C.
2 Macpherson, C. K....Goderich.
4 McBride, R. B...St. Catharines.
2 McCaffrey, W. R......Toronto.
1 McCort, C. R..........Bolton.
1 McDonald, J. P......Brantford.
1 McDonald, K. D..Carlyle, Sask.
3 McGie, W. R........Belleville,
1 McGugan, D. F.........Ekfrid.
1 McKague, E. V........Toronto.
1 McLaughlin, J.........Ottawa.
7 Manning, T. R........Toronto.
2 Mansell, G. R.........Toronto.
1 Maxwell, G. D. New Westminster, B.C.
1 Meader, J. C..........Toronto.
1 Meitz, W. H.........Pembroke.
7 Meyer, W. R.....Victoria, B.C.
2 Mills, F. L............Toronto.
1 Mitchell, G..........Hamilton.
1 Mogan, J. T...........Toronto.
7 Monteith, E. M.......Toronto.
4 Morris, A.............Toronto.
1 Morris, B. N.........Pembroke.
5 Morris, W. D.........Warwick.
2 Muir, J. M............Toronto.
1 Murphy, D. E.. New Westminster, B.C.
1 Neilson, M. A.........Toronto.
3 Newcombe, J. C.......Toronto.
1 Ney, C. H.....Edmonton, Alta.
1 Nicklin, H. S............Acton.
1 Ogilvie, T. H..........Ottawa.
7 Paterson, W. B........Denfield.
3 Payne, A. N..........Toronto.
1 Pearce, P. L.....Yorkton, Sask.

1 Peck, H. M..............Barrie.
2 Peterkin, S. M.........Toronto.
1 Porter, C. F..........Windsor.
1 Porter, J. E..........Wingham.
1 Powell, N. L.............Delhi.
7 Purdy, W. F. P......Wardsville.
1 Raley, W. E...Lethbridge, Alta.
6 Ramsay, H........Owen Sound.
1 Rance, C. C...........Toronto.
1 Rankin, G..........North Bay.
1 Redman, W. B......Birch Cliff.
3 Reid, F. G...........Belleville.
3 Relyea, J. D..........Prescott.
1 Richardson, A. A.....Peterboro.
7 Richmond, J......Smith's Falls.
7 Robertson, A. S......Walkerton.
1 Rose, J. T............Toronto.
7 Ross, A. C............Toronto.
4 Rutter, G. W........Birch Cliff.
7 Savage, E. W...........Navan.
1 Scott, E. H............Toronto.
1 Scott, R. G............Toronto.
1 Scott, W. B...........Toronto.
7 Seymour, N. F..........Essex.
1 Shaw, J. H............Toronto.
1 Sheehy, J. S.........Peterboro.
7 Shier, W. G.....Vancouver, B.C.
1 Simmons, J. F. L....Brantford.
7 Simpson, C. N.........Toronto.
2 Simpson, L. F........Hamilton.
7 Skinner, J. L..........Toronto.
3 Smith, C. A.......Worthington.
3 Smyth, A. H.........Strathroy.
1 Speirs, R. M..........Toronto.
7 Steel, W. A..........Belleville.
1 Steers, F. P............Ottawa.
1 Steven, P. L...........Toronto.
2 Stewart, H.........York Mills.
2 Stitt, J. B..........Haileybury.
7 Stone, J. D..........Chatham.
1 Storms, F. S...........Toronto.
2 Stroud, J. E. C. Bridgetown, Barbados.
7 Suhler, A. N......Port Edward.
6 Swinnerton, A. A......Toronto.
7 Taylor, A. N.......Winchelsea.
3 Taylor, H. C.....Victoria, B.C.
6 Thomas, A. M..........Toronto.
1 Tillson, L. B.......Bracebridge.
1 Tom, J. A...........Goderich.
2 Tomlinson, B. C....Willowdale.
1 Tremayne, J. E....Sutton West.
4 Tyrwhitt, R........... Toronto.
5 Uffelmann, W.........Waterloo.
1 Vance, J. A......New Hamburg.
1 Vezina, L. P....Chicoutimi, Que.
1 Wallis, J. H..........Peterboro.
7 Ward, A. L.......Niagara Falls.
7 Ward, F. W...........Toronto.
5 Watson, L. T.......Woodstock.
6 Webster, D. B.........Toronto.
1 Weir, F. E.....Saskatoon, Sask.
1 Wheelock, C. H....Orangeville.
7 Widdicombe, A. E. St. Catharines.
2 Wilcock, W. S.......Flesherton.
1 Williams, J. N......Burlington.
7 Wilson, F. C.........Kerrwood.
1 Wilson, J. C..........Wingham.
4 Wilson, W. S.........Hanover.
1 Withrow, L...Moose Jaw, Sask.
1 Wood, H. A...........Toronto.

Third Year.

1 Abendana, E. M. Port Antonia, Jamaica, B.W.I.
1 Adsett, F. C...........Guelph.
1 Alton, J. L...........Lucknow.
2 Andrews, F. C.......Hamilton.
7 Armer, C. E...........Toronto.
2 Banks, H. R..........Toronto.
1 Bedard, E. L........Courtright.
1 Bedard, H. J........Courtright.
1 Belcher, J. T..........Toronto.
7 Bemrose, B. W.......Brantford.
1 Bennett, S. G..........Toronto.
1 Binns, P. V...London, England.
7 Black, H. M...........Toronto.
1 Blyth, J. M...........Orchard.
1 Bower, J. H. W........Toronto.
3 Brown, H. H........Port Hope.
7 Brown, W. D......Chatsworth.
2 Cameron, E. P........Napanee.
1 Campbell, D. H........Kintyre.
7 Campbell, H. A........Toronto.
3 Campbell, H. M..St. Catharines.
1 Campbell, J. J............Galt.
6 Candee, C. N..........Toronto.
2 Carter, J. M...........Toronto.
2 Chambers, E. V.....Woodstock.
1 Christie, R. M..Edmonton, Alta.
1 Christner, J. C..........Berlin.
3 Clipsham, K. M.......Toronto.
1 Code, W. W....Dauphin, Man.
7 Corbould, C. E. B. New Westminster, B.C.
1 Cotton, C. P. ....Toronto.
3 Courtice, E. D. W......Clinton.
1 Crashley, J. W.........Toronto.

7	Crawford, A. W	Sarnia.
1	Cuthbertson, W	Perth.
1	Dalton, G. F	Ottawa.
1	Dashwood, R	Midland.
1	Davidson, R. D	Alliston.
1	Davidson, R. F.	Bridgewater, N.S.
3	Delamere, R. D	Toronto.
1	Douglas, F. W	Toronto.
1	Elliott, J. A	Nelson, B.C.
7	Edwards, H. C	Toronto.
3	Elliott, H. L	Norwood.
2	Ellis, S. D	Victoria, B.C.
1	Eyres, H. E	Calgary, Alta.
1	Falls, O. M	Toronto.
7	Ferguson, D. G	St. Thomas.
7	Flannery, D. T	North Bay.
1	Fleming, G. O	Toronto.
2	Fleming, J. S	Cobalt.
1	Foreman, J. L	Collingwood.
7	Franklin, H. J	Toronto.
5	Frost, J. G. G	Tweed.
1	Fuller, C. H. R	Toronto.
7	Gill, E. I	Victoria Harbor.
2	Gill, J. R	Sudbury.
1	Gouinlock, R. W	Toronto.
7	Gray, G. D	Waterford.
7	Grierson, C. I	Strathcona, Alta.
7	Griffiths, G. E	Thorold.
2	Halford, D. S	Toronto.
3	Hall, W. H	Peterboro.
3	Hally, G. H	Toronto.
1	Hanna, J. J	Calgary, Alta.
1	Hawes, J. H	Toronto.
1	Hayman, L. T	London.
1	Hogarth, B. B	Brandon, Man.
5	Holden, A. J	Woodburn.
4	Hugli, E. E. H	Golden Lake.
1	Hustwitt, S. A.	Toronto.
2	Hutchings, W	Toronto.
7	James, R. C	Guelph.
7	Jannati, A. S	Bombay, India.
1	Johnson, R. P	Toronto.
7	Jones, C. M	Toronto.
7	Kamman, J. I	Rochester, N.Y.
1	Kay, J	Toronto.
4	Keefer, N. G	Toronto.
3	Kerby, H. S	Calgary, Alta.
3	Kerr, J. A	Peterboro.
7	Kewin, G. E.	Toronto.
1	Knight, J. A	Bala.
2	Lang, S. A	Toronto.
7	Latimer, C. W	Penticton, B.C.
1	Leach, H. O	Taber, Alta.
1	Lindsay, R. E	Bolton.
7	Longworthy, W. E	Regina, Sask.
7	Lorimer, N. H	Toronto.
5	Lye, O. G	Toronto.
2	Macdonald, W. A	Cobalt.
1	Macdonald, C. A	Ridgetown.
7	Mackenzie, A. M	Guelph.
2	MacKenzie, H. J	Woodstock.
1	Macpherson, H. N.	Regina, Sask.
3	MacKendrick, B	Galt.
1	McCaw, D. A	Welland.
1	McDonald, R. C	Ripley.
1	McGill, S. B	Toronto.
7	McIntyre, J. S	Peterboro.
7	McLaren, D. L.	Drummond.
3	McQueen, P. H	Chesley.
7	Marshall, J. A.	Ryckman's P. O.
1	Marshall, J. A. P.	Victoria, B.C.
7	Matthews, R. G	Brantford.
3	Maxwell, H. W	St. Mary's.
2	Meahan, P. W.	Bathurst Village, N.B.
1	Mechin, F. C	Brougham.
1	Millar, W. G	Toronto.
1	Miller, A. S	Brighton.
6	Milligan, W. E	Toronto.
7	Mills, P	Toronto.
1	Mitchell, J. S	Lucknow.
1	Montague, J. R	Niagara Falls.
6	Morrison, D	Bowmanville,
1	Mullins, G. J	Toronto.
1	Muntz, E. P	Toronto.
7	Nicholson, C. L	Toronto.
1	Nicholson, J. B	Hamilton.
1	Noecker, C. N	Waterloo.
1	O'Connor, E. B	Toronto.
1	Omand, W. M	Regina, Sask.
1	Owens, J. A	Vernon, B.C.
1	Parker, A. H	Toronto.
1	Patterson, R. G.	St. Mary's.
7	Peart, J. D	Nelson.
1	Pennington, C. W	Dundas.
1	Perry, C. V	Toronto.
7	Philp, G. O	Port Hope.
5	Phillips, W. E	Toronto.
2	Powell, W. D	Hatchley.
3	Purdy, A. K	Toronto.
1	Raney, P. H	Toronto.
1	Rice, R. H	Toronto.
7	Robertson, A. S	Toronto.
4	Robertson, J. M	Toronto.
2	Ross, J	Toronto.
7	Rothwell, H. D	Gilford.
7	Russell, W. E	Waubaushene.
1	Rutherford, F. S	Bolton.
7	Ryan, W. M	Owen Sound.
2	Scarborough, C. M. M.	Strathcona, Alta.
7	Scott, A. G	Smith's Falls.

3 Scott, J. G............Toronto.
7 Servos, F. M. Niagara-on-the-Lake.
2 Shepley, J. G..........Gordon.
1 Sheppard, H. L.......Coldwater.
1 Sheppard, N. E. D.....Ottawa.
1 Shupe, S.............Attercliffe.
6 Sime, A. W............Toronto.
1 Simpson, B. N.........Toronto.
1 Sinclair, C. E..........Meaford.
1 Sinclair, R. B..........Toronto.
1 Skaith, J. B...........Toronto.
4 Skinner, W. C.........Toronto.
1 Smith, H. M..........Goderich.
2 Smyth, G. M........Merritton.
7 Standing, R. O.......Inglewood.
1 Steven, R. A..........Toronto.
7 Stoneman, E. C. R.....Toronto.
7 Storey, G. C...Wawanesa, Man.
1 Strome, I. R.....Brandon, Man.
1 Somers, N. L.........Rockford.
2 Taylor, G. B..........Toronto.
2 Taylor, J. S. White Horse, Yukon.
1 Temes, C. N..........Toronto.
3 Tennent, E. H.........London.
3 Tillson, G. D.......Tillsonburg.
1 Tilston, J. A...........Toronto.
1 Treloar, G. E..........Toronto.
7 Tull, W. S.....Edmonton, Alta.
6 Twidale, E. A.....Niagara Falls.
1 Vandyke, F. T........Grimsby.
3 Verity, M. F........Brantford.
1 Wagner, H. W.........Toronto.
1 Waddell, H. O......Port Hope.
1 Wallace, H. D. M......Toronto.
1 Whitley, P. L...........Gorrie.
6 Wigle, A. E.........Kingsville.
4 Wilson, A. C..........Toronto.
1 Wilson, H. P..........Toronto.
1 Wood, G. A.........Peterboro.
2 Young, R. W...........Essex.

Fourth Year.

7 Adams, O. F..........Toronto.
7 Allen, R. J........Wallaceburg.
1 Alport, F...............Orillia.
3 Anderson, A. S.......Peterboro.
1 Avery, C. R...........Toronto.
4 Baldwin, L. C. M......Toronto.
1 Beatty, F. W.........Pembroke.
1 Beatty, W. B...........Sarnia.
2 Bell, C. A.............Toronto.
7 Bell, R. S.............Toronto.
2 Binns, R. E..London, England.
1 Black, B. S............Toronto.
1 Blain, D..............Toronto.
7 Bonter, E. R..........Trenton.
7 Brereton, L. R........Toronto.
1 Brock, W. M......Thamesford.
4 Brown, B.............Toronto.
2 Buchanan, T. R.....Thessalon.
7 Buchanan, W. B.....Vandeleur.
3 Burrows, B. H. A......Toronto.
3 Cain, E. T............Sanford.
2 Caldwell, W. B........Toronto.
1 Cameron, O. L........Toronto.
1 Campbell, L. L. Saskatoon, Sask.
3 Carmichael, R. M......Kenora.
1 Carrie, G. M......Owen Sound.
2 Clark, H. A...........Toronto.
6 Clarkson, G. E........Toronto.
3 Clegg, B. D..........Peterboro.
7 Coleman, J. H.........Toronto.
1 Cook, G. M........St. Thomas.
1 Coombs, J. A..........Toronto.
4 Coon, B. R............Toronto.
2 Curtis, W. T.......Tillsonburg.
3 Davidson, H. D. Bridgewater, N.S.
1 Dates, A. J........Owen Sound.
7 Deitch, E. L...........Toronto.
5 DeLaporte, A. V.......Toronto.
2 Diamond, R. W........Toronto.
7 Duncan, W. G......Port Dover.
1 Fiddes, F. R...........London.
1 Fleming, D. H.....Pelee Island.
7 Flint, T. R. C.........Toronto.
2 Foote, F. F.....Port Dalhousie.
1 Galbraith, J. S.........Toronto.
2 Garnham, W. H.........Cayuga.
1 German, A. M........Welland.
1 Goodman, H. M.......Toronto.
1 Gray, A. G............Toronto.
3 Gray, A. J........Victoria, B.C.
1 Gray, E. R.....Vegreville, Alta.
7 Hadcock, J. P........Peterboro.
7 Hall, H. G.........Woodstock.
1 Hamilton, J. R..Winnipeg, Man.
7 Harris, H. C........Kingsville.
1 Hawley, H. A.........Toronto.
1 Hayman, A. W.........London.
1 Hearn, R. L...........Toronto.
1 Heinonen, H. J........Toronto.
3 Henry, R. A............Barrie.
7 Hill, T. A.........Ninga, Man.
1 Holden, O...Prince Albert, Sask.
1 Howard, J. T..........Toronto.
7 Howlett, T. F.........Howlett.
1 Ireson, E. T...........Toronto.

1 Johnson, G. R......Fernie, B.C.
1 Junkin, R. L..........Toronto.
7 Kelly, S. S...........Lambeth.
7 Kerr, A. E...........Hamilton.
7 Kilmer, C. E..........Toronto,
1 Laing, J. S..............Essex.
7 Leslie, A..........Owen Sound.
7 Lillie, G. L..............Orillia.
4 Livingston, H. D.....Brantford.
7 Lytle, L. B.............Tralee.
7 MacKenzie, H. A....Hyde Park.
1 Mackenzie, H. R. Scotsburn, N.S.
6 Maclachlan, K. S......Toronto.
1 MacPherson, A. R.....Petrolia.
1 MacTavish, W. H....VanCamp.
1 McCarthy, T. V.....Pembroke.
4 McConnell, R. S.....Walkerton.
1 McFaul, W. L.....Owen Sound.
1 Mickleborough, K. F. Vernon, B.C.
7 Mickler, G. J..........Preston.
1 Millman, N. C.........Toronto.
1 Moore, T. R..........Toronto.
1 Mulqueen, F. J. Sao Paulo, Brazil.
1 Murdie, W. C........Winthrop.
2 Mutch, D. A. S........Toronto.
2 Newton, K. L....Hartney, Man.
1 Oke, W. V............Toronto.
5 Otto, C. J.............Toronto.
1 Parkinson, N. F.......Toronto.
7 Peart, J. W........St. Thomas.
1 Perron, J. E. Metabetchouan, Que.
1 Phillips, J. J.......Whittington.
1 Quail, H. C...........Toronto.
7 Ratz, E. G.............Elmira.
6 Relyea, P. J..........Cornwall.
1 Riddell, J. M..........Toronto.
1 Ritchie, J. E...Saskatoon, Sask.
1 Robertson, C. S......Hamilton.
1 Roblin, H. L........North Bay.
3 Rothery, L. W.........Toronto.
7 Rous, C. C.............Toronto.
7 Russell, C. H.....Waubaushene.
7 Scarlett, A. A......Mt. Charles.
1 Sewell, L.........Cedar Grove.
1 Seymour, H. L..Red Deer, Alta.
7 Sharp, M. C...........Toronto.
3 Shaw, K. E........Wallaceburg.
3 Sims, F. R........New Durham.
2 Sinclair, D. G...........Sarnia.
4 Soper, R. W........Port Perry.
1 Spellman, W. A.......Hastings.
7 Strathy, J. M.........Toronto.
1 Sutherland, D.........Toronto.
1 Tasker, R.............Toronto.
2 Thompson, W. K......Toronto.
1 Thompson, J. M..Mount Healy.
7 Thomson, D. J.....Owen Sound.
7 Torrance, T. E...........Galt.
2 Trow, R. M..........Stratford.
1 Ure, W. G.........Woodstock.
1 VonGunten, C. F.....Blenheim.
3 Watts, R. E.........Brantford.
3 Webster, C. A.........Toronto.
4 Webster, H...........Toronto.
1 Weir, D. H.......Regina, Sask.
7 Whately, H. E......Thornbury.
1 Winters, W. S.........Toronto.
7 Wright, A. J............Barrie.
1 Wood, R. F. B.........Toronto.
7 Yorke, L. P...........Toronto.
7 Young, R. B.....Ft. Steele, B.C.

PRIZEMEN.

Engineering.

1879.	I.	Year	J. McAree	1st	Prize
1880.	II.	"	J. L Morris	1st	"
1881.	I.	"	G. H. Duggan	1st	"
	II.	"	D. Jeffrey	1st	"
1882.	I.	"	A. R. Raymer	1st	"
	I.	"	E. W. Stern	2nd	"
	II.	"	G. H. Duggan	1st	"
	III.	"	D. Jeffrey	1st	"
1883.	I.	"	B. A. Ludgate	1st	"
	I.	"	A. M. Bowman	2nd	"
	II.	"	A. R. Raymer	1st	"
	II.	"	E. W. Stern	2nd	"
	III.	"	G.H. Duggan	1st	"
1884.	II.	"	B. A. Ludgate	1st	"
	III.	"	E. W. Stern	1st	"
	III.	"	A. R. Raymer	2nd	"
1885.	I.	"	A. E. Lott	1st	"
	I.	"	J. Rogers	2nd	"
	II.	"	T. K. Thomson	1st	"
	III.	"	B. A. Ludgate	1st	"
1886.	I.	"	C. H. C. Wright	1st	"
	I.	"	J. E. Ross	2nd	"
	II.	"	A. E. Lott	1st	"
1887.	I.	"	H. E. T. Haultain	1st	"
	II.	"	C. H. C. Wright	1st	"
	III.	"	A. E. Lott	1st	"
	III.	"	J. Rogers	2nd	"
1888.	I.	"	E. B. Merrill	1st	"
	I.	"	F. M. Bowman	2nd	"
	II.	"	D. D. James	1st	"
	III.	"	C. H. C. Wright	1st	"
1889.	I.	"	J. K. Robinson	1st	"
	I.	"	G. E. Silvester	2nd	"
	II.	"	E. B. Merrill	1st	"
	II.	"	F. M. Bowman	2nd	"
	III.	"	D. D. James	1st	"
1890.	I.	"	C. Fairchild	1st	"
	II.	"	E. B. Merrill	1st	"
	III.	"	J. K. Robinson	1st	"
	III.	"	F. M. Bowman	2nd	"
1891.	I.	"	A. J. McPherson	1st	"
	I.	"	R. B. Watson	2nd	"
	II.	"	J. B. Goodwin	1st	"
	III.	"	G. E. Silvester	1st	"
	III.	"	C. W. Dill	2nd	"
1892.	I.	"	A. E. Bergey	1st	"
	I.	"	R. W. Angus	2nd	"
	II.	"	A. J. McPherson	1st	"
	II.	"	R. B. Watson	2nd	"
	III.	"	E. J. Laschinger	1st	"
	III.	"	C. Fairchild	2nd	"

The Grant of prizes was withdrawn at the close of 1892.

Architecture.

The prize in Architecture was the gift of Mr. D. B. Dick, Architect,. Toronto.

1891.	I. Year	H. F. Ballantyne.
1892.	I. Year	J. A. Ewart..
1893.	I. Year	A. H. Harkness.
1894.	I. Year	E. A. Forward.
1895.	I. Year	W. F. Scott.
1896.	I. Year	D. Macintosh.
1899.	I. Year	W. F. Shepherd.

Civil Engineering.

Prizes awarded for general proficiency in the subjects of the Third Year

Date.	Name.	Donor.
1897.	M. B. Weekes	T. Kennard Thomson, C. E.
1898.	J. A. Stewart	"
1899.	T. Shanks	"
1900.	E. H. Phillips	"
1901.	H. P. Rust	"
1902.	W. F. Ratz	"
1903.	C. R. Young	"
1904.	W. N. Moorhouse	"
1905.	W. Barber	"
1905.	N. L. Crosby	Noel Marshall, Esq.
1906.	W. P. Near. B.A	T. Kennard Thompson, C.E.
1906.	W. A. M. Cook	Noel Marshall, Esq.
1907.	M. K. McQuarrie	T. Kennard Thomson, C. E..
1907.	T. H. Hogg	Noel Marshall, Esq....
1908.	M. Pequegnat	T. Kennard Thomson, C.E.
1909.	E. S. Martindale	"
1910.	W. H. Wilson	"
1911.	F. M. Pratt	"

Mining Engineering.

1905.	G. S. Scott	Hon. W. H. Montague, M. D.
1905.	W. A. Begg	"
1906.	J. A. McKenzie	"
1906.	W. Huber	"
1907.	B. Neilly	"

Mechanical Engineering.

1905.	W. G. Nicklin	Standard Silver Co.
1906.	D. W. Marrs	"
1907.	H. O. Hill	"

Electrical Engineering.

1905.	C. E. Sisson	Noel Marshall, Esq.
1906.	A. H. Hull	"
1907.	F. R. Ewart	"

Mechanical and Electrical Engineering.

Date.	Name.	Donor.
1897.	A. T. Gray	F. A. Riehle, Esq.
1898.	F. C. Smallpiece	"
1905.	C. B. Aylesworth	Standard Silver Co.
1906.	E. M. Wood	"
1907.	H. Raine	"

Architecture.

1906.	A. W. McConnell	Hon. W. H. Montague, M.D.
1907.	G. N. Molesworth	"

Analytical and Applied Chemistry.

1906.	C. C. Forward	Standard Silver Co.
1907.	P. F. Morley	"

Scholarship.

Awarded for General Proficiency in the Third Year in Mechanical Engineering.

1912.	A. S. Anderson	The Boiler Inspection and Insurance Co. of Canada.

Degree of Bachelor of Applied Science.

1911. Adams, J. H.
1912.*Aitken, J.
1909. Akers, H. G.
1912. Allan, L. B.
1908.*Allen, F. G.
1893. Allison, T. H.
1911. Amsden, W. G.
1909.*Amos, W. L.
1908. Anderson, F. J.
1910.*Anderson, R. M.
1897.*Angus, R. W.
1904.*Angus, H. H.
1901. Ardagh, E. G. R.
1912. Archer, E. G.
1911. Arens, R. J.
1907. Armer, J. C.
1896. Armstrong, J.
1911.*Austin, E. T.
1912.*Badgley, L. A.
1897.*Bain, J. W.
1911. Baird, J. A.
1912. Baird, W. J.
1907. Baker, M. H.
1894.*Ballantyne, H. F.
1907.*Banting, E. W.
1911. Barber, H. C.
1911. Barber, T.
1906.*Barber, W.
1901. Barley, J. H.
1911. Barnett, H. A.
1910. Barry, W. H.
1910. Bartlett, E.
1912. Bartley, T. H.
1907. Bates, M.
1910.*Bennett, G. A.
1910. Beckstedt, R. D. S.
1907.*Betts, H. H.
1902. Barrett, R. H.
1895. Beauregard, A. T.
1906. Begg, W. A.
1908.*Beynon, D. E.
1912. Billings, J. H.
1911. Bissett, D. G.
1910. Birchard, E. R.
1912. Bissett, J. R.
1910. Black, W. D.
1910.*Black, G. E.
1910.*Blackwood, W. C.
1911. Blizard, D. C.
1910. Bowers, G. H.
1903. Blair, W. J.
1905. Bonnell, M. B.
1902.*Boswell, M. C.
1912. Boulton, W. J.

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*Degree with honours.

1910. Bowen, G. H.
1911.*Bowman, E. P.
1908. Bowman, H. D.
1899. Boyd, W. H.
1912.*Brackinreid, T. W.
1909. Brady, W. S.
1902. Brandon, E. T.
1907. Brandon, H. E.
1909. Brechen, P. R.
1903. Brereton, W. P.
1907. Brian, M. E.
1911.*Brock, A. F.
1896. Brodie, W. M.
1912.*Brouse, W. H. D.
1910. Brown, C. E.
1912. Brown, H. O.
1909. Brown, J. A.
1906. Brown, T. D.
1910. Brown, T. W.
1910. Browne, E. W.
1909. Buchan, P. H.
1895. Bucke, W. A.
1911.*Burgess, J. R.
1912. Burnham, G. H.
1910. Burns, J.
1909. Bush, C. E.
1907. Bunnell, A. E. K.
1906. Burnham, F. W.
1900. Burnside, J. T. M.
1905. Burwash, N. A.
1910. Cameron, M. G.
1905. Calder, J. W.
1912.*Cale, W. C.
1911.*Campbell, A. D.
1909. Campbell, A. W.
1905. Campbell, A. J.
1905. Campbell, A. M.
1910. Campbell, J. E.
1911. Carlyle, W. M.
1898. Carpenter, H. S.
1909. Carscallen, H. R.
1899. Carter, W. E. H.
1903.*Chace, W. G.
1903.*Chadsey, S. B.
1912.*Chadwick, W. W.
1912.*Chandler, R. B.
1898. Charlton, H. W.
1912. Cherry, P. G.
1909. Chesnut, F. H.
1911. Chesnut, A. W.
1912. Chesnut, E. F.
1912. Chesnut, V. F.
1894.*Chewett, H. J.
1911. Chisholm, D. C.
1903.*Christie, W.
1905. Christie, U. W.
1912. Clark, H. J.
1911. Clark, H. S.
1911.*Cline, C. G.
1906. Coates, P. C.
1911. Cockburn, L. S.
1905.*Code, T. F.
1912.*Cole, D. B.
1910.*Coltham, G. W.
1912. Cook, A. S.
1900.*Chubbuck, L. B.
1902. Cockburn, J. R.
1911. Code, A. G.
1909. Collett, W. C.
1910.*Cooch, H. A.
1910. Collinson, J. G.
1911. Colquhoun, G. A.
1907.*Cook, W. A. M.
1909. Cory, R. Y.
1900. Coulthard, R. W.
1907. Cousins, E. L.
1909. Cowper, G. C.
1909.*Coyne, H.
1901. Craig, J. A.
1912.*Craig, J. H.
1911.*Craig, S. E.
1905. Crerar, S. R.
1906.*Crosby, N. L.
1911.*Crosby, T. H.
1912. Cruthers, W. M.
1909. Culbert, J. V.
1903.*Culbert, M. T.
1910.*Cummings, J. D.
1912.*Cunningham, C. H.
1909.*Dahl, A. D.
1910.*Dallyn, F. A.
1912. D'Alton, F. K.
1907. Daniels, W. N.
1910.*Davis, A. I.
1909. Davis, R. S.
1912. Davis, W. B.
1901. Davison, J. E.
1905. Davison, A. E.
1911.*Dean, C. D.
1907.*Death, N. P. F.
1902. DeCew, J. A.
1912. DeGuerre, F. C.
1910. Delahaye, W. H.
1910. Derham, W. P.
1901. Dickson, G. W.
1901.*Dixon, H. A.
1911. Dobbin, R. L.
1896. Dobie, J. S.
1911.*Dobson, W. P.
1910.*Dodds, W. A.
1912. Dunbar, W. B.
1912.*Duncan, J. M.

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*Degree with honours.

1907. Dundass, C. S.
1909.*Dyer, F. C.
1902.*Eason, D. E.
1912. Eckert, C. H.
1909. Edwards, C.
1904. Edwards, W. M.
1912.*Elliot, J. A.
1912. Elliott, C. F.
1912. Elliott, G. R.
1897.*Elliott, H. P.
1911.*Emery, V. H.
1903. Empey, J. M.
1910. Evans, S. L.
1908. Evans, S. D.
1912. Evans, W. J.
1895.*Ewart, J. A.
1908.*Ewart, F. R.
1910. Falconer, F. S.
1910. Fargey, T. A.
1912. Farrell, K. A.
1904. Fensom, C. J.
1911.*Ferguson, C. R.
1906. Ferguson, G. H.
1910. Ferguson, J. B.
1911. Ferguson, J. W.
1910. Fergusson, A. T.
1906.*Fierheller, H. S.
1911. Fisken, J. B. K.
1910. Flanagan, O. L.
1911.*Fletcher, A. W.
1911. Fletcher, F. T.
1910. Flint, C.
1912. Flook, S. E.
1905.*Ford, A. L.
1901. Foreman, W. E.
1911. Foreman, J. M.
1909. Foster, A. H.
1911. Foulds, W. C.
1912. Frankel, E. L.
1911. Fraser, A.
1912. Freeland, E. E.
1912. Freeman, J. R.
1910. Freeman, T. E.
1910. Frost, E. R.
1912.*Fuller, R. J.
1908. Fux, P. C.
1904.*Gaby, F. A.
1903.*Gagne, S.
1911. Gall, H.
1911. Galletly, J. S.
1908.*Galt, G.
1904. Gardner, J. C.
1908.*Garrow, A. B.
1903.*Gibson, A. E.
1911. Gibson, M. M.
1904.*Gibson, N. R.
1912. Gibson, J. M.
1904. Gibson, W. S.
1904.*Gillespie, P.
1909. Gillies, A.
1911. Glover, A. E.
1911. Goad, V. A. E.
1912. Gooderham, J. L.
1912. Goodridge, H.
1894. Goodwin, J. B.
1911. Gourlay, V. F.
1912. Graham, E. B.
1910. Graham, D. A.
1908.*Graham, C. W.
1899. Grant, W. F.
1908. Grasett, C. S.
1910. Grassie, C. A.
1898. Gray, A. T.
1911. Gray, J. E.
1905. Gray, W. W.
1912. Greene, E. A.
1910. Greene, G. E. D.
1909. Greene, P. W.
1911. Greene, R. L.
1905. Greenwood, W. K.
1907. Guest, W. S.
1909.*Gulley, C. L.
1910. Gunn, W. W.
1910. Guy, E.
1909. Hackner, J. W.
1908.*Hagarty, R. E. W.
1897.*Haight, H. V.
1909. Hall, K.
1904. Hamilton, J. F.
1907. Hamilton, C. B.
1909. Hamilton, C. T.
1912. Hamilton, G. M.
1905. Hanes, G. S.
1900. Hare, W. A.
1897.*Harkness, A. H.
1908.*Harkness, A. L.
1906. Harris, C. J.
1911.*Harris, J. H.
1908. Harrison, E.
1907. Hartney, J. C.
1902. Harvey, C.
1910. Harvey, D. W.
1911.*Harvie, N. J.
1912. Heebner, M. B.
1901. Hemphill, W.
1909. Hendry, M. C.
1895. Herald, W. H.
1906.*Heron, J. B.
1907. Hett, S.
1906. Hewson, W. G.
1912.*Hickling, F. G.
1908.*Hill, H. O.

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*Degree with honours.

1912. Hill, H. R.
1908.*Hogg, T. H.
1901. Holcroft, H. S.
1910. Holmes, A. E.
1911. Holmes, C. R.
1908. Hookway, C. W.
1912. Hoover, O. H.
1907. Hopkins, C. H.
1911.*Hopkins, P. E.
1910. Hoshal, G. C.
1909. Huether, A. D.
1909.*Huether, D. J.
1912. Huff, A. J.
1910. Hughes, C.
1908.*Hull, A. H.
1896. Hull, H. S.
1910. Hunter, A. E.
1909. Hunter, A. N.
1908.*Hutton, C. H.
1912.*Hyatt, H.
1908. Hyland, H. M.
1908. Hyman, E. W.
1908.*Ireland, L. G.
1910. Irwin, H.
1910. Isbister, J.
1910. Jackes, F. P.
1909. Jackson, W.
1894. James, D. D.
1905. James, E. A.
1910. James, E. W.
1911. James, F. L.
1893. James, O. S.
1912. Jarvis, R. H.
1905. Jermyn, P. V.
1905.*Job, H. E.
1895. Johnson, S. M.
1902. Johnson, J. A.
1896. Johnson, A. C.
1910. Johnson, C. C.
1907. Johnston, C.
1910. Johnston, J. T.
1911. Johnston, C. E.
1911. Johnston, R. H.
1907. Jones, G. R.
1907. Jones, T.
1907. Jupp, A. E.
1908. Kay, E. W.
1894.*Keele, J.
1911.*Keith, J. C.
1910. Kemp, J. B. O.
1911. Kennedy, H. G.
1909. Keppy, J. D.
1910. Key, W. R.
1912.*King, J. T.
1908. Kinghorn, A. A.
1911. Kingstone, G. A.
1912.*Kirkwood, M.
1911. Kirwan, G. L.
1912. Kirwan, P. T.
1910. Klotz, H. N.
1903. Knight, R. H.
1911. Knight, S.
1899. Kormann, J. S.
1894. Laidlaw, J. T.
1893. Laing, A. T.
1909. Lamb, F. C.
1910. Lamont, A. W.
1906. Lancaster, H. M.
1907. Lang, J. L.
1910.*Langmuir, C. B.
1903. Langmuir, F. L.
1912.*Lanning, J.
1893.*Laschinger, E. J.
1901. Latham, R.
1906. Latornell, A.
1906. Latornell, A. J.
1893.*Lawson, W.
1893. Lee, W. A.
1911. Leaver, C. B.
1911. Lee, R. G.
1911. Leitch, J. N.
1910.*Lennox, A. E.
1908. LePan, A. D.
1909.*Leslie, J. N. M.
1912. Lieberman, M.
1908. Linton, A. P.
1912. Long, A. L.
1906.*Loudon, T. R.
1912. Lowrie, A. W. P.
1907. MacKenzie, K. A.
1894. McAllister, A. L.
1895. McAllister, J. E.
1911. McAlpine, D. D.
1912. McAndrew, J. B.
1893. McAree, J.
1910. McArthur, A. S.
1905. McAuslan, H. J.
1904. McBride, A. H.
1911. McBride, T. C.
1910. McCollum, C. R.
1907.*McConnell, A. W.
1911. McCordick, A. S.
1905. McCuaig, O. B.
1910. McCuaig, P. J.
1911. McDougall, S. G.
1912.*McElhanney, T. A.
1893. McEntee, B.
1912. McEwen, H. J.
1905. McEwen, G. G.
1904. McFarlane, J. A.
1906. McFarlane, W. G.
1908.*McFarlane, J. B.

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*Degree with honours.

1912. McGhie, W. G.
1905.*McGibbon, C. P.
1896.*McGowan, J.
1908.*McGugan, D. J.
1912.*McIntosh, W. G.
1905. McKay, C. D.
1912. McKechnie, F. H.
1912. McKenzie, D. A.
1896.*McKinnon, H. L.
1912. McLaren, A. J.
1909. McLean, L. A.
1912.*McLellan, R. A.
1903. McMaster, A. T. C.
1901. McMillan, J. G.
1910. McMillan, V.
1909. McMordie, H. C.
1908. McNeill, F. W.
1911.*McNiven, J.
1894.*McPherson, A. J.
1912. McPherson, W. B.
1912. McQueen, A. A.
1909.*McRoberts, A. A.
1911. McSloy, J. I.
1895. McTaggert, A. L.
1902.*McVean, H. G.
1912. MacAndrew, W. M.
1912.*Macaulay, R. V.
1897. Macbeth, C. W.
1912.*MacBeth, R. E.
1897. MacCallum, A. F.
1912.*MacDonald, A. D.
1912. MacDonald, F. M.
1911. Macdonald, G. A.
1911. Macdonald, J. A.
1911. Macdonald, J. B.
1910. Macfarlane, E. D.
1912.*MacGregor, A. E.
1904. Macintosh, D.
1912.*MacKay, E. G.
1911. MacKinnon, J. A.
1907.*Maclachlan, W.
1912. MacLaurin, J. G.
1910. Maclean, B. A.
1912. MacLennan, G. G.
1911. MacLeod, D. D.
1911. MacMurchy, H. G.
1910. Macpherson, N. W.
1911.*MacTavish, H. J.
1912.*Madill, H. H.
1912. Maisonville, A. W. R.
1908. Malcolmson, W. S.
1912.*Malone, J. E.
1910. Manning, N. H.
1910. Manson, A. B.
1912. Marr, N.
1905. Marriott, F. G.
1909. Marshall, R. J.
1912. Martin, J. C.
1897. Martin, T.
1911. Martin, W. H.
1911.*Martindale, E. S.
1911. Martyn, O. W.
1908. Mason, D. H. C.
1903.*Matheson, P.
1911. Matthews, A. C.
1912. Meader, C. H.
1908. Melson, J. W.
1907.*Menzies, J. M.
1894.*Merrill, E. B.
1911. Merriman, H. O.
1908. Miller, L. R.
1911. Milligan, F. S.
1911. Milligan, G. L.
1908. Mills, G. G.
1912. Mills, L. G.
1911. Mills, P. E.
1893. Milne, C. G.
1896. Mines, W. H.
1909. Minns, J. B.
1895.*Minty, W.
1894. Mitchell, C. H.
1907. Mitchell, B. F.
1906. Moffatt, R. W.
1900. Monds, W.
1909. Monk, E. D.
1905.*Montgomery, R. H.
1909.*Moody, F. H.
1908. Moore, J. M.
1909. Morice, J. H.
1912. Morphy, J. A.
1910. Morris, C. A.
1911. Mortimer, F. R.
1910. Morton, G.
1909. Mowbray, F. E. H.
1911. Munro, A. H.
1906. Munro, G. R.
1910. Munro, F. V.
1909. Murdock, C. R.
1910. Murphy, C. J.
1912. Murphy, M. H.
1909. Murray, E. W.
1909.*Murray, W. P.
1912. Nash, J. C.
1907.*Near, W. P.
1901. Neelands, E. V.
1908. Neelands, E. W.
1908. Neelands, R. E. K.
1908. Neilly, B.
1911.*Neville, E. A.
1904. Nevitt, I. H.
1911.*Newhall, V. A.
1910. Newton, J.

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*Degree with honours.

1911.*Newton, W. E.
1911. Nichol, F. T.
1907. Nicklin, W. G.
1912. Niebel, E. H.
1912. Nixon, C. K.
1912. Noble, E. S.
1912. Northey, R. K.
1908. Nourse, A. E.
1912. O'Donnell, V. J.
1912. O'Flynn, W. A.
1910. O'Hearn, J. J.
1904. Oliver, E. W.
1911. O'Neil, C. M.
1912. Orr, J. A.
1904. Pace, J. D.
1905. Pace, G.
1911. Palmer, C. E.
1906.*Pardoe, W. S.
1907. Park, D. G.
1905. Parke, J.
1911. Parker, G. C.
1912. Parker, J. S.
1912.*Parkin, J. H.
1904. Patten, B. B.
1912. Patten, J. McD.
1911. Pearce, K. K.
1909. Peckover, H. J.
1909.*Pequegnat, M.
1912. Perrin, W. J.
1910.*Petry, A. M.
1906. Phillips, E. P. A.
1911. Phillips, C. H.
1912. Pick, B. W.
1911. Pivnick, M.
1904. Plunkett, T. H.
1901. Pope, A. S. H.
1907. Porte, W. B.
1910. Porter, C. J.
1911. Potter, R. B.
1903.*Powell, G. G.
1912.*Pratt, F. M.
1902.*Price, H. W.
1909. Prochnow, F. E.
1909. Proctor, E. M.
1909. Publow, C. F.
1907. Purser, R. C.
1908. Quance, G. E.
1912. Quinlan, L. J.
1911. Ramsay, W. S.
1906. Ramsey, G. L.
1909.*Rannie, J. L.
1909.*Ransom, J. T.
1912.*Ratz, J. E.
1905. Raymond, D. C.
1912. Read, F. N.
1910.*Redfern, C. R.
1909.*Redfern, W. B.
1906. Reid, F. B.
1900.*Revell, G. E.
1900. Richards, E.
1910. Richardson, F. L.
1908. Richardson, C. W. B.
1911. Richardson, C. E.
1912. Richardson, W. A.
1910. Ricker, H. A.
1906.*Riddell, M. R.
1901. Roaf, J. R.
1903. Robertson, H. D.
1907. Robertson, N. R.
1909. Robertson, A. R.
1898.*Robinson, A. H. A.
1912. Robinson, W. E.
1908. Roddick, J. O.
1907. Rogers, C. H.
1912.*Rogers, L. J.
1907. Rolfson, O.
1909.*Rose, R. R.
1912. Ross, D.
1912. Ross, O. W.
1907. Ross, R. C.
1907.*Rothwell, T. E.
1905. Roxborough, G. S.
1905. Rutherford, F. N.
1910. Rutledge, L. T.
1912. Rutley, F. G.
1902. Rust, H. P.
1910. Sanderson, A. U.
1911.*Sara, R. A.
1902. Sauer, M. V.
1901. Saunders, H. W.
1912. Scandrett, F. R.
1905.*Scheibe, H. M.
1911. Schlarbaum, A.
1910. Schwenger, C. E.
1912. Scott, Miss H. E.
1912.*Scott, J. W.
1908.*Scott, W. A.
1912. Seaton, N. D.
1912.*Seibert, F. V.
1900.*Shanks, T.
1912. Shaw, M. R.
1912. Shaw, W. C.
1909. Shaw, W. E. V.
1909. Shearer, H. F.
1905. Sheply, J. D.
1895. Shields, J. D.
1899. Shipley, A. E.
1906. Shirriff, C. H.
1912.*Sills, C. P.
1903. Sinclair, D.
1906. Slater, F. W.
1902.*Smallpiece, F. C.

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*Degree with honours.

1898. Smiley, R. W.
1908.*Smith, D. A.
1904. Smith, H. G.
1912.*Smith, M. L.
1912.*Smith, W. C.
1905. Smither, W. J.
1908. Smithrim, E. R.
1912. Sneath, R. G.
1911. Sparling, M. W.
1894.*Speller, F. N.
1908.*Spencer, A. C.
1912. Spry, R. J.
1912. Squire, G. E.
1894. Squire, R. H.
1909. Stamford, W. L.
1909. Starr, R. H.
1910. Stayner, D. S.
1911.*Steele, A. L.
1912. Steele, W. S.
1911. Steven, H. M.
1902. Stevenson, W. H.
1912.*Stewart, A. E.
1908. Stewart, L. D. N.
1912. Stewart, R.
1909. Stewart, R. B.
1909.*Stewart, W. M.
1911.*Stewart, N. C.
1908.*Stiles, J. A.
1909.*Stiver, J. L.
1912.*Story, R. A.
1911. Street, J. C.
1910. Stroud, S.
1909. Stuart, H. B.
1910. Stuart, J. L. G.
1898.*Stull, W. W.
1909. Summers, G. F.
1911. Sutherland, A. L.
1911. Sutherland, C. C.
1903. Sutherland, W. H.
1910. Swan, R. G.
1906. Swan, W. G.
1911.*Sword, A. D.
1910.*Tate, H. W.
1912. Taylor, R.
1910.*Taylor, W. E.
1910. Taylor, J. W. R.
1903. Teasdale, C. M.
1912. Temple, J. B.
1900.*Tennant, D. C.
1901. Tennant, W. C.
1912. Ternan, E. A.
1909. Thomas, V. C.
1908. Thompson, P. M.
1911. Thompson, R. M. A.
1893. Thomson, R. W.
1905. Thomson, S. E.
1906. Thomson, L. R.
1907. Thomson, J. E.
1908. Thomson, O. R.
1901. Thorne, S. M.
1909. Thornley, J. H.
1901. Thorold, F. W.
1908. Tillson, E. D.
1910. Tipper, G. A.
1910. Toms, C. G.
1912. Torrance, R. D.
1912. Tough, W. G.
1905. Townsend, C. J.
1905.*Townsend, D. T.
1906. Traill, J. J.
1904. Trees, S. L.
1910.*Trees, A. G.
1896. Tremaine, R. C. C.
1905. Trimble, A. V.
1905. Tucker, B. B.
1910. Turnbull, W. G.
1906.*Turner, W. E.
1911. VanAllen, K. M.
1911.*Van Norman, C. P.
1910. Vatcher, A.
1911. Venney, L. T.
1900. Wagner, W. E.
1906. Wagner, H. L.
1912. Waite, J. H. C.
1912. Walcott, W. D.
1911. Walker, C. M.
1905.*Walker, E. W.
1910. Walker, J. A.
1912. Walker, R. M.
1912. Wallace, G. L.
1911. Walton, T.
1912. Wardell, A.
1911. Warrington, G. A.
1912. Watson, F. E.
1906. Watson, J. P.
1911. Watson, M. B.
1912. Waugh, B.
1910. Webb, C. E.
1909. Wedlake, R. M.
1898. Weekes, M. B.
1901. Weir, H. M.
1912.*Welford, P. G.
1906.*Wells, A. F.
1910.*West, A. M.
1912. Wheler, A. G.
1911. White, F. C.
1909. White, W. J.
1912. Whitside, J. L.
1911. Wickens, W. S.
1908.*Wilkes, E. D.
1912. Wilkes, G. H.
1905.*Williams, C. G.

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*Degree with honours.

1912.*Williams, E. R.
1911.*Williams, G. K.
1910.*Williams, J. A. McK.
1899.*Williamson, D. A.
1910. Williamson, O. T. G.
1911. Wilson, F. F.
1911.*Wilson, L. R.
1904.*Wilson, N. D.
1908.*Wilson, J. N.
1908. Wilson, A. F.
1909.*Wilson, F. D.
1912.*Wilson, W. H.
1908.*Wood, E. M.
1911. Woods, M. H.
1911. Wookey, S. A.
1912. Worden, W. G.
1905. Worthington, W. R.
1893.*Wright, C. H. C.
1911. Wright, L. A.
1902. Wright, R. T.
1905. Wright, W. F.
1912.*Wright, W. J. T.
1912. Wylie, W. H.
1911.*Youell, A. W.
1912.*Young, A.
1905.*Young, C. R.
1912. Young, S.
1907. Young, W. H.
1911. Young, W. S.
1903. Zahn, H.
1909.*Zimmer, A. R.

Degree of Civil Engineer (C.E.).

1898. Alison, T. H.
1889. Ashbridge, W. T.
1895. Bowman, A. M.
1893. Bowman, F. M.
1892. Chewett, H. J.
1900. Connor, A. W.
1901. Francis, Walter J.
1900. Haultain, H. E. T.
1893. Innes, W. L.
1886. Kennedy, J. H.
1908. MacCallum, A. F.
1885. Morris, J. L.
1896. Moore, J. E. A.
1898. Mitchell, C. H.
1901. McDowall, R.
1895. McAllister, J. E.
1909. Oliver, E. W.
1911. Swan, W. G.
1889. Tyrrell, J. W.
1894. Tyrrell, H. G.
1892. Thomson, T. K.

Degree of Mining Engineer (M.E.).

1897. Bucke, M. A.
1900. Laidlaw, J. T.
1909. Thomson, R. W.
1910. McMillan, J. G.
1912. Burwash, L. T.

Degree of Mechanical Engineer (M.E.).

1908. Fensom, C. J.
1901. Johnston, A. C.
1905. Laschinger, E. J.
1900. White, A. V.

Degree of Electrical Engineer (E.E.).

1896. Ross, R. A.
1903. Chubbuck, L. B.
1902. Elliott, H. P.
1905. Hemphill, W.

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*Degree with honours.

GRADUATES.

Graduates are requested to inform the Secretary of changes in their addresses.

1881.

1. J. L. MORRIS, C.E., O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.

1882.

1. D. JEFFREY, Windsor, Missouri
Contractor.
1. J. H. KENNEDY, C.E., O.L.S., Vancouver, B.C.
Chief Engineer, Great Northern Ry.
1. J. MCAREE, B.A.Sc., D.T.S. (deceased).

1883.

1. D. BURNS, O.L.S., A.M. Can. Soc. C.E., Pittsburgh, Pa.
Instructor in Mathematics and Plan Drawing, Carnegie Technical Schools.
1. G. H. DUGGAN, M. Can. Soc. C.E., Lachine, Que.
Vice-President and Chief Engineer, Dominion Bridge Co., Ltd.
1. J. W. TYRRELL, C.E., D.L.S., Hamilton, Ont.
Tyrrell & MacKay, Consulting Engineers and Surveyors.

1884.

1. W. C. KIRKLAND, New Orleans, La.
Principal Assistant Engineer, Drainage, Sewage and Water Board of New Orleans
1. J. MCDOUGALL, B.A. (deceased).
1. A. R. RAYMER, Pittsburgh, Pa.
Assistant Chief Engineer, P. & L. E. Ry.
1. JAMES ROBERTSON, O.L.S., Toronto, Ont.
Commissioner, The Canada Co.
1. E. W. STERN, M. Am. Soc. C.E., Park Ave. & 41st St., New York.
Consulting Engineer.

1885.

1. J. F. BLEAKLEY, Bowmanville, Ont.
Civil Engineer.
1. H. J. BOWMAN, D. & O.L.S., M. Can. Soc. C.E., Berlin, Ont.
Bowman & Connor.
1. E. E. HENDERSON, O.L.S., Henderson, P.O., Me.
Civil Engineer.
1. B. A. LUDGATE, O.L.S., Pittsburgh, Pa.
Assistant Engineer, P. & L. E. Ry.
1. O. MCKAY, O.L.S., Walkerville, Ont.
Civil Engineer and Surveyor.

1886.

1. A. M. BOWMAN, D.L.S., Pittsburgh, Pa.
Pennsylvania Contracting Co.
1. E. B. HERMON, D. & O.L.S., Vancouver, B.C.
Assistant Engineer Vancouver Power Co.
1. ROBERT LAIRD, O.L.S., Haileybury, Ont.
Laird & Routley, Engineers and Surveyors.
1. T. KENNARD THOMSON, C.E., M. Can. Soc., C.E., M. Am. Soc. C.E., Hudson Terminal Building, New York.
Consulting Engineer.
1. H. G. TYRRELL, C.E., A.M. Can. Soc. C.E., 540 Judson Ave., Evanston, Ill.
Consulting Engineer.

1887.

1. J. C. BURNS (deceased).
1. A. E. LOTT, Los Angeles, Cal.
Consulting Railway Engineer, 441 Bradbury Building.
1. A. L. MCCULLOUGH, O.L.S., B.C.L.S., A.M. Can. Soc. C.E., Nelson, B.C.
Engineer and Surveyor.
1. F. MARTIN, M.B., O.L.S.,
Physician.
1. C. H. PINHEY, D. & O.L.S., 110 Wellington St., Ottawa, Ont.
1. J. ROGERS, O.L.S., Mitchell, Ont.
Town Engineer.

1888.

1. J. F. APSEY, O.L.S., 3205 Wallbrook Ave., Baltimore, Md.
Assistant Division Engineer, Baltimore Sewerage Commission.
1. W. T. ASHBRIDGE, C.E., 1444 Queen St. E., Toronto, Ont.
Engineer and Surveyor.
1. EDWARD F. BALL, A.M., Can. Soc. C.E., 335 Madison Ave., New York, N.Y.
Chief Assistant Engineer, Land and Tax Department, N. Y. Central & Hudson River Railroad.
1. D. B. BROWN, O.L.S., Quebec, P.Q.
Locating Engineer, Transcontinental Ry. (G.T.P.)
1. C. M. CANNIFF, Toronto, Ont.
Consulting Engineer.
1. H. J. CHEWETT, B.A.Sc., C.E., A.M. Can. Soc. C.E., Manning Arcade, Toronto, Ont.
Mechanical Engineer, Evans Rotary Engine Co., Ltd.
1. J. GIBBONS, D. & O.L.S., Ottawa, Ont.
Surveying Staff, Department of Interior.
1. R. MCDOWALL, O.L.S., C.E., A.M. Can. Soc. C.E., Owen Sound, Ont.
Town Engineer.
1. G. W. MCFARLEN, O.L.S., Toronto, Ont.
City Engineer's Staff.
1. C. J. MARANI, Anacortes, Wash.
Designing and Consulting Structural Engineer for the Russia Cement Co.
1. G. R. MICKLE, B. A., Toronto, Ont.
Mine Assessor, Province of Ontario.
1. J. H. MOORE, O.L.S., Smith's Falls, Ont.
Town Engineer.
1. G. H. RICHARDSON, Edmonton, Alta.
Managing Director, Yellowhead Pass Coal & Coke Co.

1888—*Continued.*

1. K. Rose, Curry Bldg., Toronto.
Manager, Evans Rotary Engine Co. of Canada.
1. J. E. Ross, D. & O.L.S., Kamloops, B.C.
Surveying Staff, Department of Interior.
1. C. H. C. Wright, B.A.Sc., Toronto, Ont.
Professor of Architecture, University of Toronto.

1889.

1. B. Carey, Toronto, Ont.
1. W. J. Chalmers, Vanport, Beaver Co., Pa.
Asst. Engineer, Ohio Eiver Department for U. S. Government.
1. W. A. Clement, M. Can. Soc. C.E., Vancouver, B.C.
City Engineer.
1. G. F. Hanning, St. Eustache, Two Mountains, Quebec.
Divisional Engineer, C.N.R.
1. H. E. T. Haultain, C.E., M. Can. Soc. C.E., Toronto, Ont.
Professor of Mining Engineering, University of Toronto.
1. J. Irvine (deceased).
1. D. D. James, B.A., B.A.Sc., 227 George St., Toronto.
Surveyor.
1. F. X. Mill (deceased).
1. H. K. Moberley, D. & S.L.S., Moosomin, Sask.
District Engineer and Surveyor.
1. T. R. Rosebrugh, M. A., Toronto, Ont.
Professor of Electrical Engineering, University of Toronto.
1. T. Wickett, M.D., 25 Nightingale St., Hamilton, Ont.
Physician.

1890.

5. W. E. Boustead (deceased).
1. F. M. Bowman, O.L.S., C.E., Pittsburgh, Pa.
Secretary and Structural Engineer, Riter-Conley Mfg. Co.
1. M. A. Bucke, M.E. (deceased).
1. G. D. Corrigan (deceased).
1. J. A. Duff, B.A. (deceased).
1. A. B. English (deceased).
1. N. L. Garland, 76 Wellington St. W., Toronto, Ont.
1. J. Hutcheon, O.L.S., Guelph, Ont.
Civil Engineer.
1. W. L. Innes, O.L.S., C.E., Simcoe, Ont.
Manager, Dominion Canners, Ltd.
1. E. B. Merrill, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E. Toronto, Ont.
Consulting Engineer, Toronto General Trusts Building.
1. J. R. Pedder (deceased).
3. R. A. Ross, E.E., 80 St. Francois Xavier St., Montreal, Que.
Consulting Electrical and Mechanical Engineer.
1. T. H. Wiggins, O.L.S., Saskatoon, Sask.
Civil Engineer and Dom. Land Surveyor.
1. W. J. Withrow. Ottawa, Ont.
Patent Examiner, Patent Office.

1891.

1. H. J. BEATTY, O.L.S., Eganville, Ont.
Engineer and Surveyor.
1. T. R. DEACON, O.L.S., M. Can. Soc. C.E., Winnipeg, Man.
President and General Manager, Manitoba Bridge & Iron Works, Ltd.
1. C. W. DILL, M. Can. Soc. C.E., Winnipeg, Man.
General Manager, The National Paving Co.
5. O. S. JAMES, B.A.Sc., 227 George St., Toronto, Ont.
1. A. LANE (deceased).
1. J. E. MCALLISTER, B.A.Sc., C.E., Greenwood, B.C.
Manager, British Columbia Copper Co., Ltd.
3. E. B. MERRILL, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E., Toronto, Ont.
Consulting Engineer, Toronto General Trusts Building.
1. J. E. A. MOORE, C.E., 10074 Kee Mar Court, Cleveland, O.
Consulting and Contracting Engineer.
1. W. NEWMAN, O.L.S., A.M., Can. Soc. C.E. Windsor, Ont.
Consulting Engineer.
1. J. K. ROBINSON (deceased).
1. W. B. RUSSEL, 1307 Traders Bank Bldg., Toronto, Ont.
Civil Engineer and Contractor.
1. G. E. SILVESTER, O.L.S., M. Am. Inst. M.E., Copper Cliff, Ont.
Chief Engineer, Canadian Copper Co.
1. H. D. SYMMES, Niagara Falls S., Ont.
Engineer and Contractor.

1892.

1. J. R. ALLAN, O.L.S., Renfrew, Ont.
1. T. H. ALISON, B.A.Sc., C.E., Bayonne, N.J.
Secretary and Chief Engineer, Bergen Point Iron Works.
1. A. G. ANDERSON. Port Dover, Ont.
Hardware Merchant.
1. C. FAIRCHILD, D. & O.L.S., Brantford, Ont.
Surveying Staff, Department of Interior.
1. J. B. GOODWIN, B.A.Sc., Moose Jaw, Sask.
Resident Engineer, Construction of Water Works.
4. C. E. LANGLEY, Continental Life Bldg., Toronto, Ont.
Langley & Howland, Architects.
1. A. T. LAING, B.A.Sc., Toronto, Ont.
Secretary and Lecturer, Faculty of Applied Science, University of Toronto.
1. E. J. LASCHINGER, B.A.Sc., M.E., Johannesburg, Transvaal, S.A.
Mechanical Engineer, H. Eckstein & Co.
5. W. L. LAWSON, B.A.Sc., Sterling, Col.
Manager Great Western Sugar Co.
3. W. A. LEE, B.A.Sc. (deceased).
1. B. MCENTEE, B.A.Sc., 38 Queen St. E., Toronto.
Stationer.
3. C. G. MILNE, B.A.Sc. (deceased).
1. CHAS. H. MITCHELL, B.A.Sc., C.E., M. Can. Soc. C.E., M. Am. Soc. C.E.
Consulting Hydro-Electric Engineer, Traders Bank Bldg., Toronto.
1. N. L. PLAYFAIR, Vancouver, B.C.
1. J. M. PRENTICE (deceased).
1. J. A. ROSS, Cleveland, Ohio.
Designer L. S. & M. S. Railway, Engineering Office.

1892—*Continued.*

1. Albert N. Smith, Youngstown, Ohio.
Engineer, Wm. B. Pollock Co.
1. R. W. Thomson, B.A.Sc., M.E., 4 Charles St. W., Toronto, Ont.
Mining Engineer.
3. A. V. White, M.E., Ottawa, Ont.
Conservation Commission.

1893.

1. A. G. Ardagh, Barrie, Ont.
Land Surveyor and Civil Engineer.
4.*H. F. Ballantyne, B.A.Sc., 244 Fifth Ave., New York, N.Y.
Architect.
1. G. L. Brown, O.L.S., A.M. Can. Soc. C.E., Morrisburg, Ont.
Civil Engineer and Land Surveyor.
1.*L. C. Charlesworth, D.L.S., Edmonton, Alta.
Director of Surveys for Alberta.
1. T. H. Dunn, O.L.S., Winchester, Ont.
Engineer and Surveyor.
1. J. M. R. Fairbairn, P.L.S., Westmount, Que.
Assistant Engineer, C. P. R.
4.*W. Fingland, 334 Portage Ave., Winnipeg, Man.
Architect.
1. C. Forrester, Toronto, Ont.
1.*Walter J. Francis, C.E., M. Can. Soc. C.E., M. Am. Soc. C.E., Montreal, Que.
Walter J. Francis & Co., Consulting Engineers, 232 St. James St.
3.*A. R. Goldie, Galt, Ont.
Manager ,Goldie & McCulloch Co.
3. S. C. Hanly, Midland, Ont.
Midland Engine Works Co.
4.*J. Keele, B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.
1. J. T. Laidlaw, B.A.Sc., M.E., Cranbrook, B.C.
Consulting Mining Engineer.
3. F. L. Lash, Bandoeng, Java.
Manager, Electrical Supply Co., Board of Trade Building.
1. A. L. McAllister, B.A.Sc., 612 Continental Life Bldg., Toronto, Ont.
Consulting Engineer.
1. T. J. McFarlen, Port Arthur, Ont.
Chemist, Atikokan Iron Co.
1. A. J. McPherson, B.A.Sc., D.L.S., Regina, Sask.
City Commissioner.
1. A. F. Macallum, B.A.Sc., C.E., Hamilton, Ont.
City Engineer.
1. W. T. Main, Wells St. Depot, Chicago, Ill.
Division Engineer, C. & N. W. Ry.
1. V. G. Marani, Cleveland, Ohio.
City Building Inspector, City Hall.
1. W. Mines, B.A.Sc., Cleveland, Ohio.
With Brown Hoisting Co.
3.*J. M. Robertson, Montreal, P.Q.
Consulting Engineer.

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*Diploma with honours.

1893—*Continued.*

1. R. RUSSELL, Pembroke, Ont.
Railway Contractor.
1.*F. N. SPELLER, B.A.Sc., Pittsburgh, Pa.
Metallurgical Engineer, National Tube Co.
1. H. R. SQUIRE, B.A.Sc., O.L.S. (deceased).
1. W. V. TAYLOR, O.L.S., A.M. Can. Soc. C.E., Quebec, P.Q.
Quebec Harbour Commissioners.
1.*R. B. WATSON (deceased).

1894.

3.*R. W. ANGUS, B.A.Sc., Toronto, Ont.
Professor of Mechanical Engineering, University of Toronto.
1. H. F. BARKER, Box 31, Halifax, N.S.
1. A. T. BEAUREGARD, B.A.Sc., Verona, N.J.
Laboratory Engineer, Public Service Corporation of New Jersey.
1. A. E. BERGEY, Pittsburgh, Pa.
Carnegie Technical School.
3. D. G. BOYD, Toronto, Ont.
Department of Lands and Mines, Parliament Buildings.
3. W. A. BUCKE, Toronto, Ont.
District Manager, Canadian General Electric Co.
1. J. CHALMERS, O.L.S., A.M. Can. Soc. C.E., Edmonton, Alta.
Structural Engineer, Department of Public Works.
4.*J. A. EWART, B.A.Sc., 193 Sparks St., Ottawa, Ont.
Architect.
3. W. J. HERALD, B.A.Sc., Toronto. Ont.
Engineering Department, Canada Foundry Co.
3. H. E. JOB, B.A.Sc., Hamilton, Ont.
Manufacturer of Electrical Machinery and Apparatus.
3. A. C. JOHNSTON, B.A.Sc., M.E., Philadelphia, Pa.
Vice-President and Chief Engineer, The J. M. Dodge Co.
1. S. M. JOHNSTON, B.A.Sc., B.C.L.S. Greenwood, B.C.
1. J. E. JONES, Engineers' Club, New York, N.Y.
3. N. M. LASH, Montreal, P.Q.
Assistant Electrical Engineer, Bell Telephone Co.
1.*A. L. MCTAGGART, B.A.Sc., Rockefeller Bldg., Cleveland, O.
Office of A. G. McKee, Consulting Engineer.
3.*W. MINTY, B.A.Sc., Blackburn, Eng.
With Messrs. Yates & Thom, Ltd., Engineers.
3. C. J. NICHOLSON, Hamilton, Ont.
Assistant Engineer, Hamilton, Guelph & Waterloo Ry.
1. H. ROLPH, Montreal, Que.
Secretary, John S. Metcalf Co., Ltd.
1. J. D. SHIELDS, B.A.Sc., Toronto, Ont.
Sewer Engineer, Staff of City Engineer.
1. ANGUS SMITH, O.L.S., A.M. Can. Soc. C.E., North Vancouver, B.C.
City Engineer.
3. A. K. SPOTTON. Galt, Ont.
Chief Engineer, Goldie & McCulloch Engine Works.
3. R. T. WRIGHT, B.A.Sc., East Pittsburgh, Pa.
Engineering Department, Westinghouse Machine Co.

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*Degree with honours.

1895.

1. J. Armstrong, B.A.Sc., LePas, Man.
Chief Engineer of the Hudson Bay Ry.
3. A. E. Blackwood, 30 Church St., New York.
Manager New York Office, Sullivan Machinery Co.
1. E. J. Boswell, D.L.S., Toronto, Ont.
With C. P. R.
3. G. Brebner (deceased).
3. W. M. Brodie, B.A.Sc., Pittsburgh, Pa.
With the Green Engineering Co. of Chicago.
3. L. L. Brown, 115 Broadway, New York.
Superintendent, The Foundation Co.
4. R. J. Campbell, Chicago, Ill.
Artist, Chicago Tribune.
3. A. W. Connor, B.A., C.E., 36 Toronto St., Toronto, Ont.
Bowman & Connor, Consulting Engineers.
1. J. S. Dobie, B.A.Sc., O. & D.L.S., Thessalon, Ont.
1. F. W. Guernsey, Bankhead, Alta.
Assistant General Manager, Bankhead Mines, Ltd.
4.*A. H. Harkness, B.A.Sc., Toronto, Ont.
Structural Engineer, Confederation Life Building.
3. H. S. Hull, B.A.Sc., Johnstown, Pa.
Structural Drawing, Cambria Steel Co.
3.*J. McGowan, B.A., B.A.Sc., Toronto, Ont.
Associate Professor of Applied Mechanics, University of Toronto.
3. W. N. McKay, Georgetown, Ont.
Manager of Bank of Hamilton.
3. H. L. McKinnon, B.A.Sc., Cleveland, Ohio.
Vice-President of The C. O. Bartlett & Snow Co.
1. W. W. Meadows, D. & O.L.S., Maple Creek, Sask.
Department of Public Works.
1. F. J. Robinson, D. & O.L.S., Regina, Sask.
Deputy Minister of Public Works, Saskatchewan.
3. F. T. Stocking, Toronto, Ont.
Hydro-Electric Commission.
3. R. C. C. Tremaine, B.A.Sc. (deceased).

1896.

2.*J. W. Bain, B.A.Sc., Toronto, Ont.
Associate Professor of Applied Chemistry, University of Toronto.
2. L. T. Burwash, Dawson, Y.T.
Mining Recorder.
3.*G. M. Campbell, Riverside, Ill.
Superintendent, Power Apparatus Shops, Western Electric Co.
2. J. A. Decew, B.A.Sc., 615 Canadian Express Bldg., Montreal, Que.
Consulting Chemical Engineer.
3.*H. P. Elliott, B.A.Sc., E.E., Toronto, Ont.
Consulting Electrical Engineer.
3. W. C. Gurney, Toronto, Ont.
Vice-President, Gurney Foundry Co., Ltd.
3.*H. V. Haight, B.A.Sc., Sherbrooke, P.Q.
Chief Engineer, Canadian Rand Drill Co. Ltd.

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*Diploma with honours.

1896—*Continued.*

1. W. F. Laing (deceased).
3. R. R. Lawrie (deceased).
3. C. MacBeth, B.A.Sc. (deceased).
3. J. A. MacMurchy, Pittsburgh, Pa.
Chief Draftsman, Turbine Department, Westinghouse Machine Co.
1. T. Martin, B.A.Sc., Calgary, Alta.
Assistant Divisional Engineer, C. P. R., Western Division.
3. R. R. Scheibe, Toronto, Ont.
Sales Manager, Brigdens, Ltd.

1897.

2. E. Andrews, B.Sc., A.M.I.C.E., Portmadoc, N. Wales.
Resident Engineer, Maenofferen Slate Quarry Co., Ltd.
2.*J. A. Bow, Great Falls, Mont.
B. & M. Smelter.
1. H. S. Carpenter, B.A.Sc., O.L.S., Regina, Sask.
Superintendent of Highways, Department of Public Works.
5. H. W. Charlton, B.A.Sc., Ottawa, Ont.
Examiner, Patent Office.
4.*E. A. Forward, A.M. Can. Soc. C.E., Lockport, Man.
Engineer-in-charge, St. Andrew's Lock and Dam.
3.*A. T. Gray, B.A.Sc., Schenectady, N.Y.
Designing Engineer on Steam Turbines, General Electric Co.
3. W. A. B. Hicks, Buffalo, N.Y.
With Lackawanna Steel Co.
4. C. F. King, Toronto, Ont.
Rep. of Mortimer Co. of Ottawa.
1. H. W. Proudfoot (deceased).
2.*A. H. A. Robinson, B.A.Sc., M.A.I. M.E., Haileybury, Ont.
Mine Inspector.
4. W. F. Scott, Toronto, Ont.
Structural Engineer and Consulting Architect.
3.*W. R. Smiley, B.A.Sc., Cleveland, Ohio.
With Wellman-Seaver-Morgan Engineering Co.
2.*W. W. Stull, B.A.Sc., O.L.S., Sudbury, Ont.
Surveyor and Mining Engineer.
1.*M. B. Weekes, B.A.Sc., D.L.S., Regina, Sask.
Department of Public Works.
1. E. A. Weldon, Winnipeg, Man.
Real Estate Broker, 413 McIntyre Block.

1898.

1. W. H. Boyd, B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.
2. W. E. H. Carter, B.A.Sc., 83-85 Front Street East, Toronto, Ont.
Consulting Mining Engineer.
3. E. H. Darling, A.M. Can. Soc. C.E., Hamilton, Ont.
Resident Engineer East Hamilton Plant, Hamilton Bridge Works Co.
1. W. F. Grant, B.A.Sc., Sault Ste. Marie, Ont.
City Engineer.

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*Diploma with honours.

1898—*Continued.*

1. J. S. Kormann, B.A.Sc., Toronto, Ont.
Manager, Kormann Brewing, Ltd.
3. J. E. Lavrock, Vancouver, B.C.
Draftsman, Hermon & Burwell.
4. D. MacKintosh, B.A.Sc., B.Arch., New York, N.Y.
Chief Superintendent F. M. Andrews & Co., Metropolitan Tower.
1.*F. W. McNaughton, O.L.S., Winnipeg, Man.
Deputy Minister of Public Works.
1. J. H. Shaw, O.L.S., North Bay, Ont.
Surveyor and Engineer.
3. A. E. Shipley, B.A.Sc., Nelson, B.C.
Manager, Nelson Coke & Gas Co.
3.*F. C. Smallpiece, B.A.Sc., 1233 2nd St. E., Calgary, Alta.
General Supplies Co.
1.*R. W. Smith, P.L.S., Revelstoke, B.C.
Surveyor.
1.*J. A. Stewart, M.A., 67 Federal Life Building, Hamilton, Ont.
Engineer and Contractor.
1.*H. L. Vercoe, Montreal, Que.
Chief Draftsman, Grand Trunk Pacific Ry.
3. T. A. Wilkinson, New York, N.Y.
Statistician, Westinghouse Church Kerr Co.
3. D. A. Williamson, B.A.Sc., Hamilton, Ont.
With Hamilton Bridge Works Co.

1899.

3.*T. Barber, Meaford, Ont.
Hydraulic Engineer, Chas. Barber & Sons.
2. J. T. M. Burnside, B.A.Sc., Montreal, Que.
3. L. B. Chubbuck, B.A.Sc., E.E., Hamilton, Ont.
Engineer, Canadian Westinghouse Co.
2. G. A. Clothier, Rossland, B.C.
Engineer, Le Roy Mining Co.
1. C. Cooper, Koekuk, Iowa.
Koekuk & Hamilton Water Power Co.
2. R. W. Coulthard, B.A.Sc., Blairmore, Alta.
General Manager, West Canadian Collieries, Ltd.
3. J. A. Craig, B.A.Sc., Toronto, Ont.
Office of Willis Chipman, C.E.,
2. J. C. Elliott, Kelso, Ont.
3. W. E. Foreman, B.A.Sc., Pittsburgh, Pa.
Construction Dept., Westinghouse Electric and Mfg. Co.
3. E. Guy, B.A.Sc., Winnipeg, Man.
With Smith, Kerry & Chace.
3.*W. Almon Hare, B.A.Sc., A.M., Can. Soc. C.E., Toronto, Ont.
President, The Hare Engineering Co.
1. R. Latham, B.A.Sc., Hamilton, Ont.
Chief Engineer, T. H. & B. Ry.
3. W. Monds, B.A.Sc., 36 Toronto St., Toronto, Ont.
Clark & Monds, Consulting Engineers.
1. J. Patterson, B.A., Toronto, Ont.
Physicist, Dominion Observatory.

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*Diploma with honours.

1899—*Continued.*

3. A. S. H. POPE, B.A.Sc., Portland, Oregon.
Pope & Wilcox, Electrical and Mechanical Engineers.
2. G. E. REVELL, B.A.Sc., Nelson, B.C.
3.*E. RICHARDS, B.A.Sc., Ottawa, Ont.
Customs Appraiser.
3. G. A. SAUNDERS, Wilkinsburg, Pa.
With Westinghouse Electric & Manufacturing Co.
1.*T. SHANKS, B.A.Sc., D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1.*D. C. TENNANT, B.A.Sc., Lachine Locks, Que.
Chief Draftsman with Dominion Bridge Co.
3. W. W. VANEVERY, Sault Ste. Marie, Ont.
City Engineer.
3. W. E. WAGNER, B.A.Sc., Toronto, Ont.
With Toronto Ferry Co.
2. G. H. WATT, D.L.S., Ottawa, Ont.
Dominion Land Surveyor.
3. E. YEATES, Hamilton, Ont.
Manager, Hamilton Branch, Canadian Machinery Corporation.

1900.

1. J. L. ALLAN, A.M. Can. Soc. C.E., Dartmouth, N.S.
Asst. Engineer, Intercolonial Ry.
2. E. G. R. ARDAGH, B.A.Sc., Toronto, Ont.
Lecturer in Applied Chemistry, University of Toronto.
3. J. A. BAIN, Ottawa, Ont.
Structural Engineer, Dept. of Public Works of Canada.
3. J. H. BARLEY, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Electric and Manufacturing Co.
2.*M. C. BOSWELL, M.A., Ph.D., Toronto, Ont.
Lecturer in Organic Chemistry, University of Toronto.
1. L. T. BRAY, D. & O.L.S., Edmonton, Alta.
District Engineer and Surveyor.
3. J. CLARK, Pittsburgh, Pa.
Electrician, P. & L. E. R. R.
2. J. E. DAVISON, B.A.Sc., Fort William.
Engineering Staff, Canadian Northern Ry.
3. E. D. DICKINSON, Schenectady, N.Y.
With General Electric Co.
3. G. W. DICKSON, B.A.Sc., Grand Mere, Que.
With Laurentide Paper Co.
2.*H. A. DIXON, B.A.Sc., M.L.S., Resplendent, B.C.
District Engineer, Canadian Northern Railway.
2. C. H. FULLERTON, O.L.S., New Liskeard, Ont.
Engineer and Surveyor.
3. W. S. GUEST, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.
3. W. HEMPHILL, B.A.Sc., E.E., Buffalo, N.Y.
Superintendent, Cataract Power & Conduit Co.
3. S. E. M. HENDERSON, Peterboro, Ont.
Canadian General Electric Co.

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*Diploma with honours.

1900—*Continued.*

3. J. A. HENRY, Schenectady, N.Y.
Designing Engineer, General Electric Co.
2. H. S. HOLCROFT, B.A.Sc., D.L.S., 108 St. Vincent St., Toronto, Ont.
Surveyor, Peace River District.
3. H. A. JOHNSON, 148 Clinton St., Toronto, Ont.
Manager, Johnson Oil Engine Co., Ltd.
3. J. C. JOHNSTON, Boston, Mass.
Plant Inspector, Warren Bituminous Paving Co.
2.*J. A. JOHNSTON, B.A.Sc., Ignace, Ont.
Contractor.
2. R. E. MCARTHUR, Montreal, Que.
Const. Dept., C. P. R.
2. J. G. MCMILLAN, B.A.Sc., 225 Geoffrey Street, Toronto, Ont.
Geologist, T. & N. O. Ry.
3. L. HAUN MILLER, Cleveland, Ohio.
Sales Agent, Bethlehem Steel Co.
2. E. V. NEELANDS, B.A.Sc., Cobalt, Ont.
Manager, Hargrave and Drummond Mines.
1.*E. H. PHILLIPS, D.L.S., Saskatoon, Sask.
Phillips & Phillips, Civil Engineers and Surveyors.
2. J. R. ROAF, B.A.Sc., Bickerdike, Alta.
Yellow Head Pass Coal Co.
3.*C. H. E. ROUNTHWAITE, Sault Ste. Marie, Ont.
Chief Draftsman Algoma Central & Hudson Bay Ry.
2. H. W. SAUNDERS, B.A.Sc., Gary, W.Va.
Division Engineer, U. S. Coal & Coke Co.
1. A. TAYLOR, D.L.S. & M.L.S., Portage la Prairie, Man.
Engineer and Surveyor.
1. W. C. TENNANT, B.A.Sc. (deceased).
2. S. M. THORNE, B.A.Sc., Cobalt, Ont.
Engineering Staff, Silver Leaf Mine.
1. F. W. THOROLD, B.A.Sc., Toronto, Ont.
Civil Engineer and Contractor.
1. H. M. WEIR, B.A.Sc., Pachuca, Mex.
With Real Del Morte Co.
3. F. D. WITHROW, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.

1901.

1. R. H. BARRETT, B.A.Sc., O.L.S. (deceased).
3. W. G. BEATTY, Fergus, Ont.
Manager, Beatty Bros., Implement Manufacturers.
3. G. M. BERTRAM, Joplin, Mo.
Representative of the Sullivan Machinery Co.
3. W. J. BOWERS (deceased).
3. E. T. J. BRANDON, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Comm.
3. W. P. BRERETON, B.A.Sc., Winnipeg, Man.
Assistant Engineer, Power Construction Dept.
3. J. T. BROUGHTON, Scottdale, Pa.
Chief Engineer, Scottdale Foundry & Machine Co.
3.*W. G. CHACE, B.A.Sc., Toronto, Ont.
Smith, Kerry & Chace.

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*Diploma with honours.

1901—*Continued.*

3. A. G. Christie, Madison, Wis.
Asst. Professor of Steam Engineering, University of Wisconsin.
3. J. R. Cockburn, B.A.Sc., A.M. Can. Soc. C.E., . Toronto, Ont.
Lecturer in Descriptive Geometry, University of Toronto.
1. W. A. Duff, Ottawa, Ont.
Assistant Bridge Engineer, Transcontinental Ry.
2.*D. E. Eason, B.A.Sc., Peterboro', Ont.
Division Engineer, Trent Valley Canal.
1.*S. Gagne, B.A.Sc. (deceased).
3. N. R. Gibson, B.A.Sc., Winnipeg, Man.
Assistant Engineer, Power Const. Dept.
2. A. T. E. Hamer, Wahnapitae, Ont.
Engineering Staff, Canadian Northern Ry. Co.
1. C. Harvey, B.A.Sc., D.L.S., Kelowna, B.C.
Consulting Engineer and Surveyor.
2. F. C. Jackson, La Tuque, Que.
Jackson & Connelly, Contractors, N. T. C. Ry.
3.*A. Laidlaw, Kansas City, Mo.
District Manager, Trussed Concrete Steel Co.
3. W. C. Lumbers, Calgary, Alta.
Engineering Staff, C. P. R.
2. A. C. MacDougall, Massena, N.Y.
Assistant Superintendent, Aluminium Co. of America.
3. A. T. C. McMaster, B.A.Sc., Copper Cliff.
Engineer on Design & Construction, The Canadian Copper Co.
1. G. Macmillan, Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
3.*H. G. McVean, B.A.Sc., Moose Jaw, Sask.
Contractor and Engineer.
2. W. C. Matheson, Joliette, Que.
With Mackenzie-Mann & Co.
3. H. T. Middleton, Englewood Cliffs, N.J.
2. J. L. R. Parsons, B.A., D.L.S., Winnipeg, Man.
Engineer and Surveyor.
1. G. H. Power, North Battleford, Sask.
Western Canada Rep. of Willis Chipman, C.E.
3.*H. W. Price, B.A.Sc., Toronto, Ont.
Associate Professor of Electrical Engineering, University of Toronto.
1. H. P. Rust, B.A.Sc., A.M. Can. Soc. C.E.,
Great Western Power Co.
3. M. V. Sauer, B.A.Sc., Niagara Falls, Ont.
Assistant Engineer, Ontario Power Co.
3. W. H. Stevenson, B.A.Sc., Monadnock Block, Chicago, Ill.
Secretary Power Plant Specialty Co.
1. R. D. Willson, Winnipeg, Man.
Assistant City Engineer.

1902.

3.*H. G. Barber, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. W. J. Blair, B.A.Sc., D. & O.L.S., New Liskeard, Ont.
Civil Engineer and Surveyor.

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*Diploma with honours.

1902—*Continued.*

3. J. M. BROWN, Pittsburgh, Pa.
With Westinghouse Machine Co., Steam Turbine Dept.
2. W. G. CAMPBELL, Toronto, Ont.
2. A. R. CAMPBELL, Toronto, Ont.
Universal Mfg. Co., Ltd., St. James Chambers.
3. C. G. CARMICHAEL (deceased).
2.*W. CHRISTIE, B.A.Sc., Prince Albert, Sask.
Dominion Land Surveyor.
2. F. T. CONLON (deceased).
3. H. V. CONNOR, Pittsburgh, Pa.
With Westinghouse Electric and Mfg. Co.
2.*M. T. CULBERT (deceased).
2. R. CUMMING, 50 Front St. East, Toronto, Ont.
General Contractor.
1. W. E. DOUGLAS, B.A., 152 Bay St., Toronto, Ont.
Contractor,
3.*R. J. DUNLOP, Toronto, Ont.
With Canadian Westinghouse Co.
2. W. M. EDWARDS, B.A.Sc., Lethbridge, Alta.
Duff & Edwards.
3. W. ELWELL (deceased).
2. J. M. EMPEY, B.A.Sc., O.L.S., D.L.S. Calgary, Alta.
District Engineer and Surveyor, Dept. of Public Works.
2.*D. L. H. FORBES, 306 Manning Chambers, Toronto, Ont.
Mining and Metallurgical Engineer.
1.*A. E. GIBSON, B.A.Sc., Toronto, Ont.
Office of Haney & Miller, Engineers and Contractors.
3. A. C. GOODWIN, Pittsburgh, Pa.
Draftsman, Aluminium Co. of America.
3. C. P. HENWOOD, McKeesport, Pa.
Draftsman, National Tube Co.
3. D. M. JOHNSTON, Toronto, Ont.
With Hydro-Electric Power Comm.
2. R. H. KNIGHT, B.A.Sc., D.L.S., Edmonton, Alta.
Driscoll & Knight, Engineers and Surveyors.
5.*F. L. LANGMUIR, B.A.Sc., Ph.D., Toronto, Ont.
Chemist, M. Langmuir Mfg. Co.
3. A. H. MCBRIDE, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Commission.
1. A. L. MCLENNAN, D.L.S., Toronto, Ont.
Office of York County Engineer.
3. J. T. MACKAY, Toronto, Ont.
Student in Faculty of Medicine, University of Toronto.
3. J. F. S. MADDEN, Winnipeg, Man.
Erecting Engineering Dept., Can. Gen. Electric Co.
3.*C. H. MARRS, Pittsburgh, Pa.
Designing Engineer, Riter-Conley Mfg. Co.
3. P. MATHISON, B.A.Sc., East Pittsburgh, Pa.
Westinghouse Electric & Manufacturing Co.
3. R. S. MENNIE, Pittsburgh, Pa.
With Crucible Steel Co. of America.
2. H. H. MOORE, D.L.S., A.M. Can. Soc. C.E., Calgary, Alta.
Dominion Land Surveyor and Engineer.

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*Diploma with honours.

1902—*Continued.*

1.*T. S. NASH, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. G. G. POWELL, B.A.Sc., Toronto, Ont.
Assist. City Engineer.
1.*W. F. RATZ, D.L.S. (deceased).
3. H. D. ROBERTSON, B.A.Sc., Toronto, Ont.
Miller, Cumming & Robertson, Engineers and Contractors.
3.*D. SINCLAIR, B.A.Sc. (deceased).
2.*I. J. STEELE, D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
3. W. H. SUTHERLAND, B.A.Sc., 107 St. James St., Montreal, Que.
Assistant Engineer, Montreal Water and Power Co.
3.*T. F. TAYLOR, 494 Concord Ave., Toronto, Ont.
2.*C. M. TEASDALE, Concord, Ont.
Surveyor.
3. A. A. WANLESS, Sydney Mines, N.S.
Instructor, Department of Technical Education.
3. H. J. ZAHN, B.A.Sc., 235 Calumet St., Detroit, Mich.

1903.

3. H. G. ACRES, Toronto, Ont.
Asst. Engineer, Hydro-Electric Power Commission.
1. J. G. R. ALISON, Pittsburgh, Pa.
With Riter-Conley Mfg. Co.
3.*H. H. ANGUS, B.A.Sc., Toronto, Ont.
Chief Engineer, Canadian Domestic Engineering Co.
3. J. A. BEATTY, Peterboro', Ont.
Morrow & Beatty, Contractors.
3.*J. BRESLOVE, East Pittsburgh, Pa.
Steam Turbine Engineer, Westinghouse Machine Co.
2. J. H. BURD, O.L.S., Sudbury, Ont.
Engineer and Surveyor.
1.*E. L. BURGESS, D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
2. N. A. BURWASH, B.A.Sc., Toronto, Ont.
Surveyor, Speight & Van Nostrand.
1. F. F. CLARKE, D. &. O.L.S., A.M. Can. Soc. C.E., Toronto, Ont.
Divisional Engineer, Can. Northern Ry.
2. C. L. COULSON, Welland, Ont.
3.*A. E. DAVISON, B.A.Sc., Toronto, Ont.
Engineering Staff, Hydro-Electric Power Commission.
3. C. J. FENSOM, B.A.Sc., M.E., 43 Victoria St., Toronto, Ont.
Consulting Mechanical Engineer.
2.*E. O. FUCE, O.L.S., Galt, Ont.
Consulting Civil Engineer.
3.*F. A. GABY, B.A.Sc., Toronto, Ont.
Chief Engineer, Hydro-Electric Power Commission.
1. J. C. GARDNER, B.A.Sc., Niagara Falls, Ont.
City Engineer.
3. R. E. GEORGE, Dover, N.H.
Electrical and Gas Engineer, The United Gas & Electric Co.

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*Diploma with honours.

1903—*Continued.*

1.*P. Gillespie, B.A.Sc., Toronto, Ont.
Associate Professor of Applied Mechanics, University of Toronto.
1. W. A. Gourlay, Toronto, Ont.
Engineering Staff, C. P. R.
2. J. F. Hamilton, B.A.Sc., C.E., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.
2. G. S. Hanes, B.A.Sc., O.L.S., North Vancouver, B.C.
City Engineer.
2. F. Y. Harcourt, B.A., Port Arthur, Ont.
Engineer, Public Works Dept.
1.*L. J. Hayes, Chicago, Ill.
Structural Engineer, Corn Products Refining Co.
1.*F. D. Henderson, Secy. Board of Examiners for D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
5*J. A. Horton, New Ontario.
3. J. G. Jackson, Toronto, Ont.
Toronto Hydro-Electric System.
3. G. K. Johnston, Pefferlaw, Ont.
Merchant.
1. H. Johnston, O.L.S., Berlin, Ont.
City Engineer.
3. A. G. Lang, Toronto, Ont.
Underground Superintendent, Toronto Hydro-Electric System.
1.*A. J. Latornell, B.A.Sc., Edmonton, Alta.
City Engineer.
1.*H. J. McAuslan, B.A.Sc., O.L.S., North Bay, Ont.
Staff of T. & N. O. Ry.
3. J. A. McFarlane, B.A.Sc., Hamilton, Ont.
Chief Draftsman, Hamilton Bridge Works Co.
1.*A. L. McNaughton, Prince Rupert, B.C.
With G. T. P. Co.
5.*F. G. Marriott, B.A.Sc., Toronto, Ont.
Chemist and Supt. Asphalt Plant, City Testing Laboratory.
3.*C. A. Maus, Paris, Ont.
3.*M. L. Miller, Pittsburgh, Pa.
Draftsman, McClintic-Marshall Construction Co.
3. P. H. Mitchell, Toronto, Ont.
Consulting Electrical Engineer, Traders Bank Building.
2.*R. H. Montgomery, B.A.Sc., O. and D.L.S., Prince Albert, Sask.
Engineer and Surveyor.
1. F. A. Moore, Winnipeg, Man.
Engineering Dept. C. N. Ry.
3. E. E. Mullins, Port Limon, Costa Rica.
Supt. Motive Power, Northern Ry. Co.
3. I. H. Nevitt, B.A.Sc., Toronto, Ont.
Asst. Engineer, Main Drainage Dept., City Hall.
1. E. W. Oliver, B.A.Sc., C.E., Toronto, Ont.
Assistant to Chief Engineer, Canadian Northern Ry. System.
3. J. P. Oliver, Arabia, La.
Supt. of Construction, The American Sugar Refining Co.
3. J. D. Pace, B.A.Sc.,
3. B. B. Patten, B.A.Sc., St. Catharines, Ont.
Rutherford & Patten, Engineers and Surveyors.

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*Diploma with honours.

1903—*Continued.*

2. D. H. PHILP, Ottawa, Ont.
Georgian Bay Canal Survey.
3.*D. H. PINKNEY, Elyria, O.
National Tube Dept., U. S. Steel Corporation.
2. T. H. PLUNKETT, B.A.Sc., Meaford, Ont.
Dominion Land Surveyor.
1. D. F. ROBERTSON, D.L.S., Ottawa, Ont.
3.*H. M. SCHIEBE, B.A.Sc., East Pittsburgh, Pa.
Engineer, Westinghouse Electric & Mfg. Co.
1.*H. L. SEYMOUR, Edmonton, Alta.
Sanders & Seymour, Civil Engineers and Dominion Land Surveyors.
1. J. H. SMITH, D. & O.L.S., 140 Jasper Ave. West, Edmonton, Alta.
Engineer and Surveyor.
3. H. G. SMITH, B.A.Sc. (deceased).
3. S. L. TREES, B.A.Sc., 42 Wellington St. East, Toronto, Ont.
Supt. Mfg. Dept., Samuel Trees & Co.
2. J. E. UMBACH, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. J. WALDRON, D.L.S., Moose Jaw, Sask.
Engineer and Surveyor.
3.*S. B. WASS, Fredericton, N.B.
Supt. St. John & Quebec R.R.
3. J. A. WHELIHAN, Box 165, Regina, Sask.
3. H. F. WHITE, London, Ont.
Assistant Superintendent, The Geo. White & Sons. Co., Ltd.
2.*C. G. WILLIAMS, B.A.Sc., Elk Lake, Ont.
Superintendent, Otisse Mining Co.
1.*N. D. WILSON, B.A.Sc., Lumsden Bldg., Toronto.
Engineer and Surveyor.
1.*C. R. YOUNG, B.A.Sc., A.M. Can. Soc. C.E., Toronto, Ont.
Lecturer in Structural Engineering, University of Toronto.

1904.

3.*J. H. ALEXANDER, B.A., C.E., Assoc. M. Am. Soc. C.E.,
Engineer and Contractor. Winnipeg, Man.
3.*J. H. BARRETT, Toronto, Ont.
With the Wm. Davies Co., Ltd.
3. M. B. BONNELL, Ottawa, Ont.
Dept. of Agriculture.
3. T. D. BROWN, B.A.Sc., Calgary, Alta.
Canadian Fairbanks Co.
3. F. W. BURNHAM, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. J. W. CALDER, B.A.Sc., Fort William, Ont.
With Hydro-Electric Commission.
1. N. C. CAMERON, 4172 Dorchester St., Montreal, Que.
Dominion Engineering and Construction Co.
1. A. J. CAMPBELL, B.A.Sc., Collingwood, Ont.
3.*A. M. CAMPBELL, B.A.Sc., Chilliwack, B.C.
4. J. B. CHALLIES, Ottawa, Ont.
Hydraulic Engineer, Department of the Interior.
2. C. A. CHILVER, Walkerton, Ont.

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*Diploma with honours.

1904—*Continued.*

2. H. L. CHILVER, Moosehorn Bay, Man.
1. U. W. CHRISTIE, B.A.Sc., O.L.S., Ottawa, Ont.
Astronomical Surveys Branch, Dept. of the Interior.
2. P. C. COATES, B.A.Sc., Revelstoke, B.C.
Mining Engineer.
1. S. B. CODE, Smith's Falls, Ont.
Town Engineer.
1.*T. F. CODE, B.A.Sc. (deceased).
1.*W. A. COWAN, Brownville Jct., Maine.
Resident Engineer, C. P. R.
3.*S. E. CRAIG, B.A.Sc., Snelgrove, Ont.
1.*S. R. CRERAR, B.A.Sc., O.L.S., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
3. W. M. CURRIE, Hamilton, Ont.
Managing Director, Canada Steel Co., Ltd.
3. H. H. DEPEW, Fernie, B.C.
Supt. Crow's Nest Pass Electric Light and Power Co.
2. A. J. ELDER, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
2. J. G. FLECK, Vancouver, B.C.
Fleck Bros., Ltd.
1.*A. L. FORD, B.A.Sc., Prince Rupert, B.C.
Government Inspector, Dept. of Railways and Canals.
3. W. S. GIBSON, B.A.Sc., 38 Park Rd., Toronto, Ont.
1. J. N. GOODALL, Toronto, Ont.
Engineer, Niagara and Ontario Construction Co.
1. J. P. GORDON, Box 266, Dauphin, Man.
Engineering Staff, Willis Chipman, C.E.
3. W. W. GRAY, B.A.Sc., Edmonton, Alta.
Engineer, Edmonton Light and Power Co.
1. A. GRAY, B.A.Sc., Port Credit, Ont.
With St. Lawrence Starch Co.
3. W. K. GREENWOOD, B.A.Sc., Orillia, Ont.
Town Engineer.
1. L. D. HARA, St. Catharines, Ont.
Assistant Engineer, Welland Canal Co.
3. C. J. HARRIS, B.A.Sc., Brantford, Ont.
With Brantford Screw Co.
1. J. B. HERON, B.A.Sc., Toronto, Ont.
c.o. *S. H. Sykes, 1577 Danforth Ave.*
1. E. M. M. HILL, Edmonton, Alta.
Engineering Dept. Canadian Northern Railway.
2. S. N. HILL, 325 Waverly St., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
2. C. J. INGLES, Niagara Falls, Ont.
With Ontario Power Co.
1. E. A. JAMES, B.A.Sc., Toronto, Ont.
Engineer, York County Highway Commission.
1. P. V. JERMYN, B.A.Sc., 118 King St. West, Toronto, Ont.
C. P. R. Construction Department.
3. W. S. H. KEEFE, Fort Covington, N.Y.
Manager, Light, Heat and Power Co.
3. W. J. LARKWORTHY (deceased).

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*Diploma with honours.

1904—*Continued.*

3. O. B. McCuaig, B.A.Sc., Wenatchee, Wash.
Supt., Entiat Light and Power Co.
1. G. G. McEwen, B.A.Sc., Winchester, Ont.
Office of T. H. Dunn, O.L.S.
1.*W. G. McFarlane, B.A., B.A.Sc., 55 Elliott St., Toronto, Ont.
Engineer and Surveyor, Peace River Dist.
3.*C. P. McGibbon, B.A., Hamilton, Ont.
Canadian Westinghouse Co.
3. C. McKay, B.A.Sc. (deceased).
1. D. McMillan, Edmonton, Alta.
With C.N.R.
3. G. J. Manson, Thorold, Ont.
With Manson Mfg. Co., Ltd.
1.*W. N. Moorhouse, Toronto, Ont.
Office of Sproatt & Rolph, Architects.
3. E. E. Moore, Glen Falls, N.Y.
Engineer, Inter-State Iron Co.
3. W. H. Munro, Peterboro, Ont.
With Peterborough Radial Ry.
3. G. Pace, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. W. S. Pardoe, B.A.Sc., Philadelphia, Pa.
Asst. Prof. in Civil Engineering, University of Pennsylvania.
3. J. Paris, La Tuque, Que.
Resident Engineer, Transcontinental Ry.
1. J. Parke, B.A.Sc., Havilah, Ont.
Chemist and Assayer.
3. W. J. Parker, Ottawa, Ont.
Topographical Surveys Branch, Dept. of the Interior.
3. W. J. Peaker, Ottawa, Ont.
Topographical Surveys Branch, Dept. of the Interior.
3.* A. E. Pickering, Sault Ste. Marie, Ont.
Manager, Tagona Light and Power Co.
1. D. L. C. Raymond, B.A.Sc., Toronto, Ont.
The Bishop Construction Co., Ltd.
1. F. B. Reid, B.A.Sc., Ottawa, Ont.
Astronomical Surveys Branch, Dept. of the Interior.
3.*M. R. Riddell, B.A.Sc., Toronto, Ont.
1 L. H. Robinson, Sioux Lookout, Ont.
T. and N.O. Ry.
3. G. S. Roxburgh, B.A.Sc., Winnipeg, Man.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
2. F. N. Rutherford, B.A.Sc., St. Catharines, Ont.
Rutherford and Patten, Surveyors and Engineers.
1.*J. D. Sheply, B.A.Sc., D.L.S. N. Battleford, Sask.
District Surveyor and Engineer.
3. F. W. Slater, B.A.Sc., Schenectady, N.Y.
With General Electric Co.
3.*R. S. Smart, Ottawa, Ont.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. D. A. Smith, B.A.Sc., Regina, Sask.
Consulting Engineer.
3. W. J. Smither, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
3. S. E. Thomson, B.A.Sc., Niagara Falls, Ont.
Engineering Staff, Electrical Development Co.

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*Diploma with honours.

1904—*Continued.*

3. C. J. Townsend, B.A.Sc., Chicago, Ill.
Mechanical Engineer, Liquid Carbonic Co.
1. D. T. Townsend, B.A.Sc., O.L.S., Winnipeg, Man.
C.P.R. Land Department.
1. A. V. Trimble, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.
3. B. B. Tucker, B.A.Sc., Morrisburg, Ont.
Resident Engineer, New York and Ontario Power Co.
2.*E. Wade, B.A., Welland, Ont.
Builder.
1.*E. W. Walker, B.A.Sc. (deceased).
3. J. P. Watson, B.A.Sc., Montreal, Que.
With the St. Lawrence Bridge Co.
1. J. M. Weir, Toronto, Ont.
Sec.-Treasurer, The Toronto Plate Glass Importing Co., Ltd.
1.*A. F. Wells, O.L.S., B.A.Sc., Toronto, Ont.
Wells & Gray, Ltd., Engineers and Contractors.
1. W. R. Worthington, B.A.Sc., Toronto, Ont.
Assistant Sewer Engineer, Staff of City Engineer.
3. W. F. Wright, Toronto, Ont.
Sales Dept., Canadian General Electric Co.

1905.

2. H. W. Arens (deceased).
3. R. H. Armour, 165 Broadway, New York.
Westinghouse Electric & Manufacturing Co.
3.*C. B. Aylesworth, Hamilton, Ont.
Draftsman, Canadian Westinghouse Co.
1.*W. Barber, B.A.Sc., Toronto, Ont.
Engineer, Waterworks Department, City Hall.
2.*W. A. Begg, B.A.Sc., Regina, Sask.
Department of Public Works.
3.*G. G. Bell, 5 Walker St., Portland, Maine.
1. J. C. Boeckh, Toronto, Ont.
With Boeckh Brush Co.
3. W. M. Bristol, Halifax, N.S.
Canadian Westinghouse Co.
2. W. C. Campbell, Keene, Ont.
Mining Engineer.
3. W. R. Carson, Cleveland, O.
Engineering Dept., Grasselli Chemical Co.
1. A. V. Chase, Ottawa, Ont.
Dept. of the Interior.
3. S. R. A. Clement, Toronto, Ont.
With Hydro-Electric Power Commission.
3. T. E. Corrigan, Bodie, Cal.
Chief Electrician, Standard Consolidated Mining Co.
1.*N. L. R. Crosby, B.A.Sc., Chicago, Ill.
Assistant Contracting Engineer, McClintic-Marshall Const. Co.
1. G. H. Ferguson, B.A.Sc., Ottawa, Ont.
Assistant Engineer, Commission of Conservation.
3. H. S. Fierheller, B.A.Sc. (deceased).

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*Diploma with honours.

1905—*Continued.*

3. F. H. Harrison, 360 Pearl St., Brooklyn, N.Y.
Assistant to Chief Engineer, Brooklyn Edison Co.
1. M. C. Hendry, B.A.Sc., Toronto, Ont.
2. C. S. L. Hertzberg, Toronto, Ont.
James, Loudon & Hertzberg.
3.*W. G. Hewson, B.A.Sc., Niagara Falls, Ont.
1. G. S. Jones, Smith's Falls, Ont.
3.*G. Kribs, Dallas, Texas.
Texas Power and Light Co.
2. P. A. Laing, Fanquier, Ont.
Resident Engineer, T. C. Ry.
1. A. Latornell, B.A.Sc., Toronto, Ont.
Sewer Department, City Hall.
3. J. W. Leighton, Toronto, Ont.
President, Leighton-Jackes Mfg. Co.
1.*T. R. Loudon, B.A.Sc., Toronto, Ont.
Lecturer in Metallurgy, University of Toronto.
3. S. E. McGorman, Walkerville, Ont.
Draftsman, Canadian Bridge Co.
1.*W. W. McGregor (deceased).
2. D. W. McKenzie, Winnipeg, Man.
Draftsman, Engineering Dept. C.N. Ry.
3.*C. A. McLean. Toronto, Ont.
Canadian Westinghouse Co.
2. W. N. McLean, Erin, Ont.
3. F. G. Mace, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.
3. R. W. Moffatt, B.A.Sc., Winnipeg, Man.
University of Manitoba.
3. L. W. Morden, Toronto, Ont.
Canadian Westinghouse Co.
3. G. R. Munro, B.A.Sc., 405 Dorchester St. W., Montreal, Que.
Assistant to R. S. Lea.
3.*W. G. Nicklin, B.A.Sc., Grand Rapids, Mich.
Assistant Superintendent, Dalnu & Kiefer Tanning Co.
1. E. D. O'Brien, Nipigon, Ont.
With Transcontinental Ry.
1.*B. B. Patten, B.A.Sc., St. Catharines, Ont.
Rutherford & Patten, Surveyors and Engineers.
1. E. P. A. Phillips, B.A.Sc., O.L.S., Porcupine, Ont.
Pierce & Phillips, Engineers and Surveyors.
1. W. B. Porte, Oakville, Ont.
2. E. F. Pullen, Cochrane, Ont.
Resident Engineer, Transcontinental Ry.
2. G. L. Ramsey, B.A.Sc., Dunnville, Ont.
1. G. W. Rayner, Thorold, Ont.
3.*R. B. Ross (deceased).
5. T. E. Rothwell, B.A.Sc., Toronto, Ont.
Provincial Assay Office.
2.*G. S. Scott, 26 Howard St., Toronto, Ont.
3. H. V. Serson, New York, N.Y.
Engineer, Snare & Triest Co., Limited.
3. C. H. Shirriff, B.A.Sc., Toronto, Ont.
Chemist, Imperial Extract Co.

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*Diploma with honours.

1905—*Continued.*

3.*C. E. SISSON, Peterboro', Ont.
Canadian Gen. Electric Co.
1. D. L. N. STEWART, B.A.Sc., Collingwood, Ont.
1. M. A. STEWART, Toronto, Ont.
Assistant City Engineer, Roadway Dept., City Hall.
3.*W. F. STUBBS, Galt, Ont.
Assistant Engineer, Goldie & McCulloch Co.
1. N. H. STURDY, Cleveland, Ohio.
Designer, L. S. & M. S. Ry.
1. W. G. SWAN, B.A.Sc., Langley, B.C.
Divisional Engineer, C.N. Ry.
1.*F. H. SYKES, O.L.S., D.L.S., Toronto, Ont.
City Architect's Dept., City Hall.
3. L. R. THOMSON, B.A.Sc., Montreal, Que.
With Dominion Bridge Co.
3. E. D. TILLSON, B.A.Sc., Hotel Albert, New York, N.Y.
1.*J. J. TRAILL, B.A.Sc., Toronto, Ont.
Lecturer in Mechanical Engineering, University of Toronto.
1.*W. M. TREADGOLD, B.A., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
3. W. E. TURNER, B.A.Sc., Salt Lake City, Utah.
With Utah Light & Ry. Co.
3. A. E. UREN, Toronto, Ont.
Editor, Acton Publishing Co.
3. J. M. VAUGHAN. 58 Melville Ave., Toronto, Ont.
Contractor.
1. H. L. WAGNER, B.A.Sc., Toronto, Ont.
With Canada Foundry Co.
2. W. H. YOUNG, B.A.Sc., D.L.S., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.

1906.

1. F. ALPORT, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3.*W. L. AMOS, Guelph, Ont.
1. A. H. ARENS, Inverness, N.S.
Resident Engineer, Inverness Ry, & Coal Co.
3.*J. C. ARMER, B.A.Sc., Toronto, Ont.
Secretary Treasurer Commercial Press, and Manager of the Canadian Manufacturer Publishing Co., Ltd.
1. M. H. BAKER, B.A.Sc., St. Thomas, Ont.
City Engineer.
3. F. W. BALDWIN, Hammondsport, N.Y.
With Graham Bell, Esq.
2. E. W. BANTING, B.A.Sc., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
3. F. BARBER, B.A., 57 Adelaide St. East, Toronto, Ont.
York County Engineer.
2. M. BATES, B.A.Sc. (deceased).
2. J. P. BELLISLE (deceased).
3.*H. H. BETTS, B.A.Sc., Rio de Janeiro, Brazil.
Rio de Janeiro Tramway, Light & Power Co.

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*Diploma with honours.

1906—*Continued.*

5.*D. E. Beynon, B.A.Sc., Toronto, Ont.
With Dunlop Rubber Goods Co.
2. G. W. Bissett, Naughton, Ont.
Mill Supt., Canadian Exploration Co., Ltd.
3. W. C. Blackwood, B.A.Sc., Toronto, Ont.
Instructor Technical High School.
3. H. E. Brandon, B.A.Sc., Winnipeg, Man.
Chief Engineer, Vulcan Iron Works.
1. M. E. Brian, B.A.Sc., O.L.S., A.M. Can. Soc. C.E., Windsor, Ont.
City Engineer.
2. F. C. Broadfoot, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.
2. T. W. Brown, B.A.Sc., D. & S.L.S., Saskatoon, Sask.
Brown & Loucks, Civil Engineers.
1.*A. E. K. Bunnell, B.A.Sc., Brantford, Ont.
Engineer, Lake Erie and Northern R.R.
3. F. M. Byam, Toronto, Ont.
Chief Engineer, McGregor and McIntyre.
3. A. Cameron, Winnipeg, Man.
With the Vulcan Iron Works.
3. A. W. Campbell, B.A.Sc., Toronto, Ont.
Inspector, Hydro-Electric Power Commission.
1. M. J. Carroll, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
3.*R. E. C. Chadwick, Montreal, Que.
Manager, The Foundation Co. of New York.
1.*G. T. Clark, B.A., Saskatoon, Sask.
City Engineer.
3.*G. A. Colhoun, Hamilton, Ont.
Draftsman, The Hamilton Bridge Works Co., Ltd.
1.*W. A. M. Cook, B.A.Sc., Toronto, Ont.
Staff of City Architect, City Hall.
1.*E. L. Cousins, B.A.Sc., Toronto, Ont.
Engineer, Harbour Commission.
4. A. G. Creighton, Prince Albert, Sask.
Creighton & Strothers, Architects and Structural Engineers.
4. W. N. Daniels, 1215 Filbert St., Philadelphia, Pa.
With John. R. Wiggins & Co.
3.*N. P. F. Death, B.A.Sc., 25 Jarvis St., Toronto, Ont.
Death & Watson, Electrical Engineers and Contractors.
3. C. S. Dundass, B.A.Sc., Lachine, Que.
With Dominion Bridge Co.
3. S. L. Fear, Amherstburg, Ont.
With Dunbar, Sullivan Dredging Co.
5.*C. C. Forward, Ottawa, Ont.
Laboratory of the Inland Revenue Department.
5. C. W. Graham, B.A.Sc., Toronto, Ont.
Chemist, Dunlop Tire Co.
1.*P. W. Greene, 161 Admiral Road, Toronto, Ont.
3. C. B. Hamilton, B.A.Sc., 43 Madison Ave., Toronto, Ont.
Hamilton Gear and Machinery Co.
1.*A. L. Harkness, B.A.Sc., Montreal, Que.
St. Lawrence Bridge Co., Ltd.

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*Diploma with honours.

1906—*Continued.*

1.*R. L. Harrison, Cobourg, Ont.
Resident Engineer, Canadian Northern Ry.

1. E. Harrison, B.A.Sc., Calgary, Alta.
Harrison & Ponton, Civil and Mining Engineers.

3. J. C. Hartney, B.A.Sc., Vancouver, B.C.
Engineer & Salesman, Canadian Westinghouse Co.

1. S. Hett, B.A.Sc., LePas, Man.
Locating Engineer of the Hudson Bay Ry.

3. C. R. Hillis, Toronto, Ont.
With Toronto & Niagara Power Co.

3. C. W. Hookway, B.A.Sc., Winnipeg, Man.
Allis-Chalmers-Bullock Co.

3. R. H. Hopkins, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.

1.*R. S. Houston, Winnipeg, Man.
With the Vulcan Iron Works.

2.*W. Huber, Toronto, Ont.
With York County Highway Commission.

3.*A. H. Hull, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.

3. W. C. Jepson, Niagara Falls, Ont.
Welland Canal Office.

1.*C. Johnston, B.A.Sc., Toronto, Ont.
District Engineer, Canadian Northern Ry.

1. G. R. Jones, B.A.Sc., China.
Missionary.

3. T. Jones, B.A.Sc., Toronto, Ont.
Engineer, Canadian Brake Shoe Co.

1.*A. E. Jupp, B.A.Sc., 165 Bolton Ave., Toronto, Ont.

3. J. D. Keppy, Toronto, Ont.
Russel Motor Car Co.

1. J. L. Lang, B.A.Sc., D. & O.L.S., Sault Ste. Marie, Ont.
Lang & Keys, Engineers and Surveyors.

3. A. P. Linton, B.A.Sc., Regina, Sask.
Dept. Public Works.

4.*A. Wellesley McConnell, B.A.Sc., Toronto, Ont.
Lecturer in Architectural Design, University of Toronto.

3.*D. G. McIlwraith, Galt, Ont.
Draftsman, The Goldie & McCulloch Co., Ltd.

2. J. A. McKenzie, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.

1.*J. V. McNab, Moose Jaw, Sask.
Resident Engineer, C.P.R.

3. J. A. McPherson, Toronto, Ont.
Student, Faculty of Medicine, University of Toronto.

2. K. A. MacKenzie, B.A.Sc., Ft. George, B.C.
K. A. MacKenzie & Co., Ltd.

1. W. MacKinnon, Wilkinsburg, Pa.
Erection Dept., McClintic Marshall Construction Co.

3.*W. Maclachlan, B.A.Sc., Belleville, Ont.
Local Manager, Trenton Electric and Water Co.

3.*D. W. Marrs, Pittsburgh, Pa.
Designer and Estimator, Riter-Conley Mfg, Co.

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*Diploma with honours.

1906—*Continued.*

3. W. A. Maxwell, Walkerville, Ont.
Draftsman, Canadian Bridge Co.
1.*Rev. J. Mellon Menzies, B.A.Sc., D.L.S., Wu An Hsien, North Honan, China.
Missionary.
3. L. R. Miller, B.A.Sc., Orillia, Ont.
1.*B. F. Mitchell, B.A.Sc., Edmonton, Alta.
Municipal Engineer.
1. F. F. Montague, 506 Union Bank Bldg., Winnipeg, Man.
Law Student.
1.*W. J. Moore, O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.
1. C. R. Murdock, B.A.Sc., Winnipeg, Man.
Resident Engineer, Chipman and Power.
2. C. J. Murphy, B.A.Sc., Fernie, B.C.
Chief Engineer, Crow's Nest Pass Coal Co.
1.*W. P. Near, B.A., B.A.Sc., St. Catharines, Ont.
City Engineer.
2. R. Neelands, Port Hammond, B.C.
3. D. G. Park, B.A.Sc., 92 Arlington St., Winnipeg, Man.
Engineer, Waldron Co., Ltd., Heating Engineers.
3. G. W. Paterson, Vancouver, B.C.
Salesman, Canadian Financiers, Ltd.
5. R. E. Pettingill, Port Colborne, Ont.
Chief Chemist, Canada Cement Co.
2.*R. C. Purser, B.A.Sc., Windsor, Ont.
3. N. R. Robertson, B.A.Sc., Walkerton, Ont.
1. J. O. Roddick, B.A.Sc., Toronto, Ont.
Assistant Engineer, Dept. of Public Works of Canada.
1. C. H. Rogers, B.A.Sc., Peterboro', Ont.
Peterboro' Canoe Co.
2.*O. Rolfson, B.A.Sc., D.L.S., Box 378, Walkerville, Ont.
Department of the Interior.
1. R. C. Ross, B.A.Sc., Ottawa, Ont.
Department of the Interior.
1. K. G. Ross, Sault Ste. Marie, Ont.
With Lang & Keys, Engineers and Surveyors.
1.*H. T. Routly, O.L.S., D.L.S., Haileybury, Ont.
Routly & Summers, Engineers and Surveyors.
2. J. H. Ryckman, Chicago, Ill.
Construction Dept., Strauss Bascule Bridge Co.
3.*W. K. Sanders, 58 Webster St., West Newton, Mass.
1.*W. A. Scott, B.A.Sc., D.L.S., Galt, Ont.
Dominion Land Surveyor.
1.*W. M. Stewart, B.A.Sc., 142 Aberdeen Ave., Hamilton, Ont.
2. J. E. Thomson, B.A.Sc., W. Virginia, U.S.A.
With Sterling Coal Co.
3.*C. L. Vickery, 85 Barlow St., Fall River, Mass.
Chief Engineer, American Thread Co.
5. W. E. Wickett (deceased).
3.*J. N. Wilson, B.A.Sc., Toronto, Ont.
3.*E. M. Wood, B.A.Sc., 136 Lee Ave., Toronto, Ont.
Engineering Dept., Canadian General Electric Co., Ltd.

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*Diploma with honours.

1907.

3.*F. G. Allen, B.A.Sc., Hyde Park, Mass.
Assistant to Chief Engineer, B. F. Sturtevant Co.
1. F. J. Anderson, B.A.Sc., Niagara Falls, Ont.
1. A. P. Augustine, Vancouver, B.C.
B.C. Land Surveyor.
3.* H. D. Bowman, B.A.Sc., 509 Ontario St., London, Ont.
3. W. S. Brady, B.A.Sc., 579 Euclid Ave., Toronto, Ont.
1. G. H. Broughton, Penticton, B.C.
Manager, People's Trust Co.
1. J. A. Brown, B.A.Sc., Porcupine, Ont.
With Routly & Summers.
1. C. E. Bush, B.A.Sc., 156 Geoffrey St., Toronto, Ont.
Civil Engineer and Surveyor.
3. J. H. Caster, Toronto, Ont.
Toronto Hydro-Electric System.
1.*E. Cavell, Toronto, Ont.
1.*C. B. B. Connell, Glasgow, Scotland.
With Mirrless & Watson.
3.*G. C. Cowper, B.A.Sc., Welland, Ont.
2. J. V. Culbert, B.A.Sc., Toronto, Ont.
Draftsman, Toronto Iron Works.
3.*R. S. Davis, B.A.Sc., Calgary, Alta.
Sales Engineer, Canadian Westinghouse Co.
3. S. D. Evans, B.A.Sc., Leamington, Ont.
3.*F. R. Ewart, B.A.Sc., 44 Sussex Ave., Toronto, Ont.
Toronto Hydro-Electric System.
1. G. R. S. Fleming, Toronto, Ont.
With the Atwell Fleming Printing Co.
6. P. C. Fux, B.A.Sc., Brantford, Ont.
With Waterous Engine Works Co.
1. J. S. Galletly, B.A.Sc., Brooklin, Ont.
2. G. Galt, B.A.Sc., East Ely, Nevada.
With Nevada Co.
1. A. B. Garrow, B.A.Sc., Toronto, Ont.
Assistant Engineer, Main Drainage Dept., City Hall.
1. A. Gillies, B.A.Sc., Minnedosa, Man.
1. G. W. Graham, Eugenia, Ont.
3. C. S. Grasett, B.A.Sc., 8 Harbord, St., Toronto, Ont.
1.*R. E. W. Hagarty, B.A.Sc., Calgary, Alta.
Trussed Concrete Steel Co.
3. K. Hall, B.A.Sc., 39 Sherman Ave., Hamilton.
1. C. T. Hamilton, B.A.Sc., Niagara Falls, Ont.
With Ontario Power Co.
3. R. A. Hare, St. Catharines, Ont.
With Canadian Crocker Wheeler Co.
3.*H. O. Hill, B.A.Sc., Pittsburgh, Pa.
With Riter-Conley Mfg. Co.
1.*T. H. Hogg, B.A.Sc., Toronto, Ont.
Asst. Engineer, Hydro-Electric Power Comm.
3.*C. H. Hutton, B.A.Sc., Hamilton, Ont.
Engineering Staff, Dominion Power Co.
1. H. M. Hyland, B.A.Sc., 75 St. Mary St., Toronto, Ont.
3. E. W. Hyman, B.A.Sc., London, Ont.
Assistant Superintendent, London Electric Co.

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*Diploma with honours.

1907—*Continued.*

3.*L. G. IRELAND, B.A.Sc., *Supt., Hydro-Electric Power Comm.*	Brantford, Ont.
1.*W. JACKSON, B.A.Sc., *With Ontario Power Co.*	Niagara Falls, Ont.
4.*C. B. JACKSON, *Estimating Department, C. Everett Clark Co.*	Kenilworth, Ill.
3.*E. W. KAY, B.A.Sc., *Salesman, Canadian Westinghouse Co.*	Winnipeg, Man.
3. D. F. KEITH, *Secretary, Keith's Limited.*	Toronto, Ont.
1. H. P. KEITH, *Smith & Keith, Alta. Land Surveyors and Engineers.*	Edmonton, Alta.
1. A. A. KINGHORN, B.A.Sc., *Inspector of Roadways, City Engineer's Department.*	Toronto, Ont.
1. L. W. KLINGNER, *Resident Engineer, C.P.R.*	Smith's Falls, Ont.
1.*F. C. LAMB, B.A.Sc., *Department of Public Works.*	North Battleford, Sask.
3. A. D. LEPAN, B.A.Sc., *Assistant Superintendent of Buildings and Grounds, University of Toronto.*	Toronto, Ont.
1. J. H. LINDSAY,	Hornby, Ont.
3. J. A. D. MCCURDY, *With Graham Bell, Esq.*	Hammondsport, N.Y.
1.*J. B. MCFARLANE, B.A.Sc., *Dominion Land Surveyor.*	60 Lonsdale Rd., Toronto, Ont.
3.*D. J. MCGUGAN, B.A.Sc., *With Hill & Burnett.*	New Westminster, B.C.
3. A. H. MCINTOSH, *With Illinois Steel Co.*	Chicago, Ill.
3. F. W. MCNEILL, B.A.Sc., *Canadian General Electric Co.*	Peterboro', Ont.
1.*M. K. MCQUARRIE, *Resident Engineer, C.P. Ry. Co.*	Revelstoke, B.C.
1.*G. MACLEOD,	Montreal, P.Q.
1. A. G. MACKAY, *With Hudson & Manhattan Ry. Co.*	New York, N.Y.
1. W. S. MALCOLMSON, B.A.Sc., *Engineer and Surveyor.*	163 Havelock Street, Toronto, Ont.
3. S. A. MARSHALL,	Snelgrove, Ont.
6. D. H. C. MASON, B.A.Sc., *Akers, Mason & Bonnington, Chemical Engineers.*	Toronto, Ont.
1. J. W. MELSON, B.A.Sc., *Demonstrator in Drawing, University of Toronto.*	Toronto, Ont.
1. G. G. MILLS, B.A.Sc.,	89 Glen Rd., Toronto, Ont.
3. J. B. MINNS, B.A.Sc., *Canadian General Electric Co.*	Winnipeg, Man.
4.*G. N. MOLESWORTH, *Draftsman, Eden Smith & Son, Architects.*	Toronto, Ont.
1. J. M. MOORE, B.A.Sc., *With McClary Mfg. Co.*	London, Ont.
5.*P. F. MORLEY, *Metorological Office.*	Toronto, Ont.

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*Diploma with honours.

1907—*Continued.*

1. E. W. Murray, B.A.Sc., Regina, Sask.
Dept. of Public Works.
3. J. D. Murray. Toronto, Ont.
With Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. E. W. Neelands, B.A.Sc., New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. R. E. K. Neelands, B.A.Sc., Brampton, Ont.
2.*B. Neilly, B.A.Sc., Cobalt, Ont.
Manager, Penn-Canadian Mines.
1. A. E. Nourse, B.A.Sc., Toronto, Ont.
3. J. J. O'Sullivan, Toronto, Ont.
With Canada Railway News Co.
2. T. K. Paton, Wardner, Ida.
Mining Engineer.
1. F. W. Paulin, O.L.S., Niagara Falls, Ont.
Civil Engineer.
1. R. B. Potter, B.A.Sc., Toronto, Ont.
Asst. Engineer, Roadways Dept., City Hall.
3.*F. E. Porchnow, B.A.Sc., Buffalo, N.Y.
With Wilhelm, Parker & Ward, Patent Attorneys.
3.*J. F. Procunier, Bayham, Ont.
3. G. E. Quance, B.A.Sc., Delhi, Ont.
Secy.-Treas. of the Delhi Light & Power Co., Ltd.
3.*H. Raine, Hamilton, Ont.
With Prack & Perrine, Architects and Engineers.
1.*J. L. Rannie, B.A.Sc., Ottawa, Ont.
Observer, Geodetic Survey.
3. C. W. B. Richardson, B.A.Sc., Montreal, Que.
Motive Power Dept., Angus Shops.
1. A. A. Ridler, Toronto, Ont.
Supt. Constructing & Paving Co., Ltd.
5. H. E. Rothwell, Port Richmond, N.Y.
Assistant Chemist, Standard Varnish Works.
5. C. A. Schofield, Buffalo, N.Y.
Chemist, Schoell-Kopf-Hartford & Hanna Co.
1.*A. C. T. Sheppard,
1. F. R. Smith, B.A., Gowganda, Ont.
Manager, Can. Gowganda Silver Mines.
3. E. R. Smithrim, B.A.Sc., Watrous, Sask.
Supt., Watrous Electric Light, Power and Traction Co., Ltd.
1.*W. Snaith, Toronto, Ont.
Secy.-Treas., The Thor Iron Works, Ltd.
3. A. C. Spencer, B.A.Sc., Hamilton, Ont.
Mechanical Engineer, Hamilton Stove & Heater Co.
3. G. S. Stewart, Toronto, Ont.
Agent, Canadian General Electric Co.
1. J. A. Stiles, B.A.Sc., Fredericton, N.B.
Professor of Civil Engineering, University of N.B.
3.*J. L. Stiver, Ottawa, Ont.
Electrical Standard Laboratory, Inland Revenue Department.
1. J. L. G. Stuart, B.A.Sc., Toronto, Ont.
Railway and Special Works Department, City Hall.
1. G. F. Summers, O.L.S., Haileybury, Ont.
Routly & Summers, Engineers and Surveyors.

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*Diploma with honours.

1907—*Continued.*

1.*H. W. Sutcliffe, New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. P. M. Thompson, B.A.Sc., Ambridge, Pa.
Draftsman, American Bridge Co.
3. O. R. Thomson, B.A.Sc., Highgate, Ont.
1. L. R. Thomson, B.A.Sc., Montreal, Que.
With Dominion Bridge Co.
1. W. J. Walker, Nipigon, Ont.
With Transcontinental Ry.
1. E. D. Wilkes, B.A.Sc., Toronto, Ont.
Main Drainage Department, City Hall.
3. A. F. Wilson, B.A.Sc., Chicago, Ill.
Inspector, Chicago Telephone Co.
3. M. H. Woods, B.A.Sc., Aylmer West, Ont.
1. G. W. A. Wright, 517 Oxford St., London, Ont.
Warren Bituminous Paving Co.
3. J. Young, Toronto, Ont.
Inspector, Canadian Fire Underwriters' Association.
3.*A. R. Zimmer, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.

1908.

3. H. G. Akers, B.A.Sc., 448-449 Confederation Life Bldg., Toronto, Ont.
Akers, Mason & Bonnington, Chemical Engineers.
3. L. F. Allan, Toronto, Ont.
Roadway Dept., City Hall.
1.*C. B. Allison, South Woodslee, Ont.
1.*R. M. Anderson, B.A.Sc., Burlington, Ont.
5. R. J. Arens, B.A.Sc., Akron, O.
Chemist, Firestone Tire & Rubber Co.
6. H. C. Barber, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
1. E. Bartlett, B.A.Sc., Smithville, Ont.
Dominion Land Survey Work.
2. F. J. Bedford, Lakefield, Ont.
1.*G. G. Bell, Portland, Me.
With Sawyer & Moulton, Consulting Engineers.
3. G. E. Black, B.A.Sc., Guelph, Ont.
Roadway Engineer, Provincial Prison Farm.
3. H. F. Bowes, Toronto, Ont.
Superintendent of Warren Bituminous Paving Co., Ltd.
3.*J. H. Brace, Montreal, P.Q.
Traffic Engineer, Bell Telephone Co.
1. P. R. Brecken, B.A.Sc., Toronto, Ont.
Assistant Secretary, Y.M.C.A.
3. E. I. Brown, Toronto, Ont.
Power Dept., Toronto Hydro-Electric System.
1. W. F. M. Bryce, Ottawa, Ont.
Assistant Engineer, City Engineer's Department.
3. P. H. Buchan, B.A.Sc., Vancouver, B.C.
Engineering Department, B.C. Electric Ry. Co., Ltd.
2. J. E. Campbell, B.A.Sc., Coldstream, Ont.

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*Diploma with honours.

1908—*Continued.*

3. N. A. CAMPBELL, Calgary, Alta.
Chief Chemist, Canada Cement Co.

3. A. M. CARROLL, Cobalt, Ont.
Manager, Rochester Cobalt Mines, Ltd.

1. H. R. CARSCALLEN, B.A.Sc., Calgary, Alta.
Assistant Hydrographer, with P. M. Sauder.

3. G. CHALLEN, Goderich, Ont.

1. F. H. CHESNUT, B.A.Sc., Port Mann, B.C.
Resident Engineer, C.N.R. Plant.

1. W. E. COLE (deceased).

4.*W. C. COLLETT, B.A.Sc., Toronto, Ont.
Collett-Simpson Fibre Tire Works, Ltd.

1. R. Y. CORY, B.A.Sc., 3 Deer Park Crescent, Toronto, Ont.
Bond Department, Baillie, Croft and Wood.

3.*H. COYNE, B.A.Sc., Washington Blvd., Chicago, Ill.
Designing Draftsman.

2.*J. D. CUMMING, B.A.Sc., Copper Cliff, Ont.
With Canadian Copper Co.

6. A. D. DAHL, B.A.Sc., Midland, Mich.
Chemist, Dow Chemical Co.

1. F. A. DANKS, 544 Gladstone Ave., Toronto, Ont.

3. J. DARROCH, Detroit, Mich.
Draftsman, Autoparts Mfg. Co.

3. H. C. DOORLY, St. Catharines, Ont.
Assistant Engineer, Jenckes Machine Co., Ltd.

2. R. H. DOUGLAS, Edmonton, Alta.
Department of Public Works.

2.*F. C. DYER, B.A.Sc., Toronto, Ont.
Demonstrator in Mining, University of Toronto.

1. F. M. EAGLESON, Winchester, Ont.
Engineer and Surveyor.

1. C. EDWARDS, B.A.Sc., Toronto, Ont.
With Standard Sanitary Mfg. Co.

1. S. L. EVANS, B.A.Sc., Corinth, Ont.

1. E. O. EWING, Toronto, Ont.

1. O. L. FLANAGAN, B.A.Sc., Toronto, Ont.
With C. H. Mitchell, Consulting Engineer, 1003 Traders Bank Bldg.

1. C. FLINT, B.A.Sc., Winnipeg, Man.
Assistant Engineer, C.P.R.

1. A. H. FOSTER, B.A.Sc., Cochrane, Ont.
With T. C. Ry.

3. G. C. FRANCIS, Verschoyle, Ont.

3. S. S. GEAR, Fort Erie, Ont.

1. C. A. GRASSIE, B.A.Sc., Welland, Ont.

3.*C. L. GULLEY, B.A.Sc., Toronto, Ont.
Northern Electric and Manufacturing Co.

3. J. W. HACKNER, B.A.Sc., Sandford, Ont.
Inspector of Public Works.

3. F. L. HAVILAND, Hamilton, Ont.
Draftsman, Hamilton Bridge Works Co.

1.*C. D. HENDERSON, Walkerville, Ont.
Canadian Bridge Co.

5.*D. J. HUETHER, B.A.Sc., Toronto, Ont.
With Dunlop Tire and Rubber Co.

1. A. D. HUETHER, B.A.Sc., 77 Grenville St., Toronto, Ont.

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*Diploma with honours.

1908—*Continued.*

3.*A. N. Hunter, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
3. S. B. Iler, Belleville, Ont.
Construction Department, Smith, Kerry & Chace.
1.*J. T. Johnston, B.A.Sc., Ottawa, Ont.
Water Power Branch, Dept. of the Interior.
2. H. G. Kennedy, B.A.Sc., 22 Grenville St., Toronto, Ont.
1.*W. R. Keys, Winchester, Ont.
3.*J. N. M. Leslie, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. F. C. Lewis, Chicago, Ill.
American Bridge Co.
3. H. R. Lynar, Toronto, Ont.
Lynar & Mace, Consulting Engineers.
1.*W. G. McGeorge, Chatham, Ont.
Consulting Engineer.
1. J. M. McGregor, Ridgetown, Ont.
1. L. A. McLean, B.A.Sc. (deceased).
1. W. A. A. McMaster, Palmerston, Ont.
1. H. C. McMordie, B.A.Sc., Walkerville, Ont.
With Canadian Bridge Co.
1.*A. A. McRoberts, B.A.Sc., Pontypool, Ont.
Assistant on Dominion Land Survey.
5.*N. G. Madge, New York, N.Y.
Chief Chemist, Continental Rubber Co. of N. Y.
3. J. E. Malone, B.A.Sc., Toronto, Ont.
5. K. D. Marlatt, Oakville, Ont.
The Marlatt & Armstrong Co.
1. R. J. Marshall, B.A.Sc., Toronto, Ont.
Demonstrator in Applied Mechanics, University of Toronto.
5. G. L. Milligan, B.A.Sc., Brampton, Ont.
1. A. B. Mitchell, Montreal, Que.
With N. MacLeod, Contractors.
4.*J. C. P. Molesworth (deceased).
3. E. D. Monk, B.A.Sc., Pittsfield, Mass.
General Electric Co.
3.*F. H. Moody, B.A.Sc., 70 Bond St., Toronto, Ont.
Mechanical Editor, Canadian Railway & Marine World.
3. J. H. Morice, B.A.Sc., 938 Albany St., Schenectady, N.Y.
3. F. E. H. Mowbray, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
3.*W. P. Murray, B.A.Sc., Montreal, Que.
Dominion Bridge Co.
3. W. deC. O'Grady, Winnipeg, Man.
Engineer, Gas Traction Co., Ltd.
1. H. J. Peckover, B.A.Sc., 205 Dunn Ave., Toronto, Ont.
Draughtsman, City Hall.
1.*M. Pequegnat, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
1. H. G. Phillips, Saskatoon, Sask.
Phillips & Phillips, Civil Engineers and Surveyors.
3. M. Pivnick, B.A.Sc., Toronto, Ont.
1.*E. M. Proctor, B.A.Sc., Toronto, Ont.
Draftsman, Dept. of Railways and Bridges, City Hall.

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*Diploma with honours.

1908—*Continued.*

3.*C. F. Publow, B.A.Sc., Winnipeg, Man.
With The Vulcan Iron Works.
1. J. T. Ransom, B.A.Sc., Toronto, Ont.
Dominion Land Surveyor.
1.*W. B. Redfern, B.A.Sc., Steelton, Ont.
1. F. L. Richardson, B.A.Sc., Toronto, Ont.
With Miller, Cummings & Robertson.
3. H. A. Ricker, B.A.Sc., 1 Madison Ave., Hamilton, Ont.
Canadian Westinghouse Co.
1. A. R. Robertson, B.A.Sc., Toronto, Ont.
With McGregor & McIntyre.
5. F. A. Robertson, Toronto, Ont.
With Canadian Inspection and Testing Laboratories, Ltd.
1.*W. A. Robinson, Winnipeg, Man.
3. R. C. Robinson, 134 Edmonton St., Winnipeg, Man.
With C. N. Ry.
5. L. J. Rogers, B.A.Sc., Toronto, Ont.
Demonstrator in Chemistry, University of Toronto.
2.*R. R. Rose, B.A.Sc., Copper Cliff, Ont.
With Canadian Copper Co.
3. D. Ross, B.A.Sc., Toronto, Ont.
Smith, Kerry & Chace.
1. A. O. Secord, Brantford, Ont.
3. W. E. V. Shaw, B.A.Sc., Toronto, Ont.
Purchasing Engineer, Hydro-Electric Power Commission.
3. H. F. Shearer, B.A.Sc., Windsor, Ont.
With Canadian Maloney Transformer Co.
1. W. L. Stamford, B.A.Sc., Point du Bois, Man.
Inspector on Concrete Work, Hydro-Electric Power Plant.
3. R. H. Starr, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
3. A. W. J. Stewart, Toronto, Ont.
Electrical Department, City Hall.
3. J. St. Lawrence, Erie, Pa.
Supt. of Engine Shops, Erie City Iron Works.
1. J. J. Stock, 445 Cooper St., Ottawa, Ont.
1. H. B. Stuart, B.A.Sc., Hamilton, Ont.
Draftsman, Hamilton Bridge Works Co.
2. J. L. G. Stuart, B.A.Sc., Toronto, Ont.
Railway & Special Works Department, City Hall.
3. A. D. Sword, B.A.Sc., 220 Rusholme Rd., Toronto, Ont.
3. J. W. R. Taylor, B.A.Sc., 158 Portage Ave., E., Transcona, Man.
1.*W. E. Taylor, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
3. V. C. Thomas, B.A.Sc., Cleveland, Ohio.
With Wellman-Seaver-Morgan Co.
1. J. H. Thornley, B.A.Sc., Niagara Falls. Ont.
H. D. Symnes & Co.
1. C. G. Toms, B.A.Sc., 60 Spencer Ave., Toronto, Ont.
1. H. W. Tye, Winnipeg, Man.
Construction Dept., C.P.R.
3. C. P. Van Norman, B.A.Sc., Toronto, Ont.
Toronto and York Radial Ry. Co.

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*Diploma with honours.

1908—*Continued.*

1. T. L. Villeneuve, Chicoutimi, Que.
Assistant Engineer, Dept. of Public Works.
1. J. A. Walker, B.A.Sc., Vancouver, B.C.
Assistant to Surveyor-General.
3.*B. W. Waugh, B.A.Sc., Ottawa, Ont.
Dept. of the Interior.
3. R. M. Wedlake, B.A.Sc., Brantford, Ont.
With Cockshutt Plow Co., Ltd.
3. R. P. Weir, Toronto, Ont.
With Toronto Power Co.
1. A. M. West, B.A.Sc., Vancouver, B.C.
C.N.R. Office.
1. W. R. White, Drayton, Ont.
3. W. J. White, B.A.Sc., Boston, Mass.
Supt. on Construction, General Electric Co.
3.*F. D. Wilson, B.A.Sc., Toronto, Ont.
Structural Engineering Dept., Canada Foundry Co.
1. J. M. Wilson, Moose Jaw, Sask.
Wilson, Townsend and Saunders, Engineers and Contractors.
1. D. O. Wing, Vancouver, B.C.
City Engineer's Office.
3.*R. Young, Lake Bunstzen, Burrard Inlet, B.C.

1909.

3. E. G. Arens, Hamilton, Ont.
Canadian Westinghouse Co.
3. H. V. Armstrong, Estevan, Sask.
Resident Engineer, Chipman & Power.
2.*E. T. Austin, B.A.Sc., Coniston, Ont.
With the Mond Nickel Co.
3. W. H. Barry, B.A.Sc., Niagara Falls, Ont.
Anderson and Barry, Engineers and Surveyors.
3. R. D. S. Beckstedt, B.A.Sc., Sault Ste. Marie, Ont.
Sales Agent, Tagona Water & Light Co.
3. R. E. Beith, Toronto, Ont.
Dept. of Public Works.
1.*G. A. Bennett, B.A.Sc., Tillsonburg, Ont.
Dominion Land Surveyor, Dept. of the Interior.
3. E. R. Birchard, B.A.Sc., Toronto, Ont.
Russell Motor Car Co.
3. W. D. Black, B.A.Sc., Montreal, Que.
Supt., Otis-Fensom Elevator Co., Ltd.
3.*D. C. Blizard, B.A.Sc., Toronto, Ont.
Supt. Mechanical Construction, Toronto Power Co.
1.*W. J. Boulton, B.A.Sc., Wallaceburg, Ont.
3. G. H. Bowen, B.A.Sc., Niagara Falls, Ont.
Engineer on Construction, H. A. Campaigne & Co.
3. C. E. Brown, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
1. E. W. Browne, B.A.Sc., 247 Cannon St. E., Hamilton, Ont.
1. J. A. Buchanan, Comber, Ont.
3. J. E. Burns, B.A.Sc., 231 Seaton St., Toronto, Ont.

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*Diploma with honours.

1909—*Continued.*

1. M. G. Cameron, B.A.Sc., Peterboro', Ont.
3.*R. A. Campbell, Sault Ste, Marie, Ont.
Supt., Tagona Water & Light Co.
1. V. S. Chesnut, B.A.Sc., Sault Ste. Marie, Ont.
Resident Engineer, C.N.P.R.
1.*C. G. Cline, B.A.Sc., Kamloops, B.C.
Assistant Engineer, Dept. of the Interior.
1. J. G. Collinson, B.A.Sc., Niagara Falls, N.Y.
Carborundum Co.
1. G. W. Coltham, B.A.Sc., Aurora, Ont.
3.*H. A. Cooch, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. W. E. Corman, Toronto, Ont.
Chief Draftsman, with C. H. & P. H. Mitchell.
3. T. H. Crosby, B.A.Sc., Vancouver, B.C.
Sales Engineer, Canadian Westinghouse Co.
3. R. H. Cunningham, 193 Dougall Ave., Windsor, Ont.
Hoskins Electrical Manufacturing Co.
1.*F. A. Dallyn, B.A.Sc., Toronto, Ont.
Engineer, City Testing Laboratory, Board of Public Health.
3. C. N. Danks, Sherbrooke, Que.
Asst. Engineer, Jenckes Machine Co.
1. E. M. Dann, Kamloops, B.C.
Asst. Engineer, Hydrographic Survey.
3. H. W. Davis, Kingston, Ont.
With A. Davis & Son, Ltd., Leather Manufacturers.
2.*A. I. Davis, B.A.Sc., Toronto, Ont.
Canada Foundry Co.
1. H. C. Davis, Bangalore, India.
With Dr. Leslie Coleman.
1. I. H. Dawson, St. Catharines, Ont.
With T.C. Ry.
3. W. H. Delahaye, B.A.Sc., Pembroke, Ont.
3. W. P. Derham, B.A.Sc., Ottawa, Ont.
5.*W. A. Dodds, B.A.Sc., Syracuse, N.Y.
With Penman-Littlehales Chemical Co.
1. R. H. Douglas, Edmonton, Alta.
Department of Public Works.
1. M. O. Duff,
2. L. J. Duthie, Schumacher, Ont.
Assayer and Surveyor.
1. F. S. Falconer, B.A.Sc., 127 Slater St., Ottawa, Ont.
3. T. A. Fargey, B.A.Sc., Detroit, Mich.
With Scott Bros. Electric Co.
1. J. B. Ferguson, B.A.Sc., Toronto, Ont.
3. A. T. Fergusson, B.A.Sc., 70 Madison Ave., Toronto, Ont.
3. T. E. Freeman, B.A.Sc., Peterboro', Ont.
Canadian General Electric Co.
3. E. R. Frost, B.A.Sc., St. Albert, Alta.
Resident Engineer, Foundation Co.
1. A. E. Glover, B.A.Sc., Edmonton, Alta.
5. A. E. Gooderham, Toronto, Ont.
With Gooderham & Worts.
1. D. A. Graham, B.A.Sc., Chilliwack, B.C.
Track Engineer, C.N.P.R.

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*Diploma with honours.

1909—*Continued.*

2. R. R. Grant, 106 Warren Rd., Toronto, Ont.
Contractor.
1. J. E. Gray, B.A.Sc., Edmonton, Alta.
With T.C. Ry.
1. G. E. D. Greene, B.A.Sc., Toronto, Ont.
1. W. H. Greene, Moose Jaw, Sask.
Assistant City Engineer.
1. W. W. Gunn, B.A.Sc., 133 Isabella St., Toronto, Ont.
3. C. J. Harper, Le Pas, Man.
Engineer and Surveyor.
1. D. W. Harvey, B.A.Sc., Toronto, Ont.
Canada Foundry Co.
1. C. O. Hay (deceased).
3.*J. Hemphill, Magpie Mine, Ont.
Construction Engineer, Algoma Steel Corpn., Mines Dept.
1.*G. Hogarth, Toronto, Ont.
Engineer's Office, Dept. of Public Works of Ontario.
3. A. E. Holmes, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
3. C. R. Holmes, B.A.Sc., Detroit, Mich.
With Electric Storage Battery Co.
1. G. C. Hoshal, B.A.Sc., Windsor, Ont.
Hydro-Electric Power Commission.
3. C. Hughes, B.A.Sc., 47 Dundonald St., Toronto, Ont.
With St. John & Quebec Ry.
1. A. E. Hunter, B.A.Sc., Surveying, Peace River Dist.
3.*H. Irwin, B.A.Sc., Toronto, Ont.
Secretary, Engineering Society, University of Toronto.
3. J. Isbister, B.A.Sc., Victoria Mines, Ont.
Electrical Supt., with Mond Nickel Co.
3. F. P. Jackes, B.A.Sc., Toronto, Ont.
Traffic Dept., Bell Telephone.
1.*J. E. Jackson, Oxford Centre, Ont.
1. E. W. James, B.A.Sc., 100 Scollard St., Toronto, Ont.
1.*C. C. Johnson, B.A.Sc., Box 730, North Bay, Ont.
1. C. E. Johnston, B.A.Sc., Fairford, Man.
Dom. Land Surveyor.
1. W. J. Johnston, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.
1.*A. H. E. Keffer, North Bay, Ont.
With T. & N.O. Ry.
3. J. B. O. Kemp, B.A.Sc., Toronto, Ont.
With Toronto Structural Steel Co.
3. W. R. Key, B.A.Sc., Toronto, Ont.
Asst. Engineer, Turnbull Elevator Co.
5. H. N. Klotz, B.A.Sc., Toronto, Ont.
Chemist, Gutta Percha Rubber Co.
3. A. W. Lamont, B.A.Sc., Toronto, Ont.
Sales Engineer, Toronto Hydro-Electric System.
3.*C. B. Langmuir, B.A.Sc., Toronto, Ont.
Manager, Electrical Dept., Factory Products, Ltd.
3. A. E. Lennox, B.A.Sc., Cleveland, Ohio.
Publicity Engineer, National Electric Lamp Association.

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*Diploma with honours.

1909—*Continued.*

1.*R. W. E. Loucks, Saskatoon, Sask.
Brown & Loucks, Engineers & Contractors.
1. N. C. A. Lloyd, Solina, Ont.
3. E. D. MacFarlane, B.A.Sc., Houston, Texas.
With Houston Electric Ry. Co.
1. J. G. Mackinnon, Fitzhugh, Alta.
Resident Engineer, C.N.R.
1. W. A. MacLachlan, Guelph, Ont.
3. B. A. Maclean, B.A.Sc., Orillia, Ont.
1. N. W. Macpherson, B.A.Sc., St. Thomas, Ont.
3. D. D. McAlpine, B.A.Sc., Hawkesbury, Ont.
Engineer, Riordon Paper and Pulp Co.
1. A. S. McArthur, B.A.Sc., 56 Lowther Ave., Toronto, Ont.
3. C. R. McCollum, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
3.*A. S. McCordick, B.A.Sc., Sault Ste, Marie, Ont.
Assistant to City Engineer.
3. P. J. McCuaig, B.A.Sc., Milwaukee, Wis.
1. F. H. McKechnie, B.A.Sc., Toronto, Ont.
3. W. G. McIntosh, B.A.Sc., Toronto, Ont.
Canada Foundry Co.
3. G. McLeod, Waupaca, Wis.
Electrician, Electric Light & Ry. Co.
1. V. McMillan, B.A.Sc., Toronto, Ont.
Sewer Dept., City Hall.
3. N. H. Manning, B.A.Sc., Toronto, Ont.
District Representative, Canadian Insp. & Testing Labs.
1.*A. B. Manson, B.A.Sc., Stratford, Ont.
City Engineer.
1. E. S. Martindale, B.A.Sc., Aylmer, Ont.
Dominion Land Surveyor.
1. O. W. Martyn, B.A.Sc., D.L.S., S.L.S., Box 489, Regina, Sask.
2. C. A. Morris, B.A.Sc., Copper Cliff, Ont.
Canadian Copper Co.
3. G. Morton, B.A.Sc., Calgary, Alta.
Canadian Westinghouse Co.
1.*F. V. Munro, B.A.Sc., Chatham, Ont.
1. E. A. Neville, B.A.Sc., Vancouver, B.C.
Neville & Stewart, Civil Engineers.
1. J. Newton, B.A.Sc., Toronto, Ont.
City Engineer's Department.
3.*L. S. Odell, Morden, Man.
Contractor's Supt.
3. V. J. O'Donnell, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. J. J. O'Hearn Toronto, Ont.
Manager, Supply Dept.,. Canadian General Electric Co.
1. A. W. Pae, Calgary, Alta.
Davidson & Pae, Real Estate Brokers.
1.*A. M. Petry, B.A.Sc., Toronto, Ont.
Assistant Manager, "Chas. Potter."
1. R. B. Pigott. 157 Wentworth St. S., Hamilton, Ont.
2. G. M. Ponton, Calgary, Alta.
Harrison & Ponton.

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*Diploma with honours.

1909—*Continued.*

3.*C. J. Porter, B.A.Sc., Portland, Oregon.
Draftsman, Mount Hood Ry. & Power Co.
3. A. I. Proctor, King St. E., Hamilton, Ont.
1. J. Quail, Winnipeg, Man.
Manitoba Bridge and Iron Works.
1. A. F. Ramsperger, Toronto, Ont.
With Canada Foundry Co.
1.*C. R. Redfern, B.A.Sc., Cooksville, Ont.
Engineer, P. Lyall & Sons, Ltd., Contractors.
3.*L. T. Rutledge, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
1. A. U. Sanderson, B.A.Sc., 10 Oaklands Ave., Toronto, Ont.
3.*R. A. Sara, B.A.Sc., Winnipeg, Man.
Industrial Engineer, City Light and Power Dept.
3.*A. Schlarbaum, B.A.Sc., Merritton, Ont.
Riordon Paper and Pulp Co.
3.*C. Schwenger, B.A.Sc., Toronto, Ont.
Electrical Department, City Hall.
1. C. A. Scott, Toronto, Ont.
Roadway Department, City Hall.
1. A. Sedgwick, Toronto, Ont.
Ontario Dept. of Public Works.
1. B. H. Segre, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. F. V. Seibert, B.A.Sc., Edmonton, Alta.
Engineer & Surveyor.
5. M. R. Shaw, B.A.Sc., Toronto, Ont.
Alumni Research Fellow, University of Toronto.
3. M. W. Sparling, B.A.Sc., Trenton, Ont.
Trenton Electric Power Co.
3. J. J. Spence, Toronto, Ont.
With Sovereign Construction Co.
1.*D. S. Stayner, B.A.Sc., Toronto, Ont.
Bridge Department, City Engineer's Office.
1.*N. C. Stewart, B.A.Sc., Hazelton, B.C.
With Burden & Co.
1.*P. H. Stock, St. Catharines, Ont.
Asst. Engineer, N. St. C. & T.R. Ry.
1. J. C. Street, B.A.Sc., St. Catharines, Ont.
Welland Ship Canal.
3. S. Stroud, B.A.Sc., Toronto, Ont.
With Canadian Westinghouse Co.
1. C. C. Sutherland, B.A.Sc., 446 Heiminck St., Edmonton, Alta.
City Engineer's Staff.
1. R. G. Swan, B.A.Sc., Vancouver, B.C.
B. C. Electric Railway Co.
1. A. D. Sword, B.A.Sc., 220 Rusholme Rd., Toronto, Ont.
1.*H. W. Tate, B.A.Sc., 224 Wright Ave., Toronto, Ont.
With James, Loudon & Hertzberg, Engineers.
3.*E. A. Thompson, Lachine Locks, Que.
With Dominion Bridge Co.
1. G. A. Tipper, B.A.Sc., Brantford, Ont.
Contracting Surveyor.

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*Diploma with honours.

1906—*Continued.*

3. A. G. Trees, B.A.Sc., Toronto, Ont.
With Saml. Trees & Co.
3. W. G. Turnbull, B.A.Sc., Toronto, Ont.
Chief Engineer, Turnbull Elevator Co.
1. J. E. Underwood, Saskatoon, Sask.
McArthur, Murphy & Underwood.
1. C. P. Van Norman, B.A.Sc., Toronto, Ont.
Asst. Engineer, Toronto & York Radial Ry. Co.
1. J. Van Nostrand, 97 Delaware Ave., Toronto, Ont.
1. A. Vatcher, B.A.Sc., Freshwater, Bay de Verde, Nfld.
With the Reid Newfoundland Co.
1. C. M. Walker, B.A.Sc., Banff, Alta.
Dom. Land Surveyor.
1. E. E. Webb, Box 358, Orillia, Ont.
Contractor.
1. C. E. Webb, B.A.Sc., 227 Spadina Rd., Toronto, Ont.
3. F. C. White, B.A.Sc., Walkerville, Ont.
With Canadian Bridge Co.
3. A. R. Whitelaw, Toronto, Ont.
With Smith, Kerry & Chace.
1. R. G. Wilkinson, Aberarder, Ont.
5.*J. A. McK. Williams, B.A.Sc., Toronto, Ont.
A. E. Ames & Co.
1.*O. T. G. Williamson, B.A.Sc., Quebec, Que.
With Canadian Stewart Co.
3. L. R. Wilson, B.A.Sc., Montreal, Que.
With St. Lawrence Bridge Co., Ltd.
3. F. F. Wilson, B.A.Sc., Edmonton, Alta.
Surveyor.
2. S. A. Wookey, B.A.Sc., Schumacher, Ont.
Surveyor, McIntyre Mine.

1910.

2. J. H. Adams, B.A.Sc., 25 Maynard Ave., Toronto, Ont.
3.*O. F. Adams, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*W. G. Amsden, B.A.Sc., 95 Howland Ave., Toronto, Ont.
1. J. A. Baird, B.A.Sc., Leamington, Ont.
With A. Baird, O.L.S., C.E.
1.*W. J. Baird, B.A.Sc., Toronto, Ont.
Fellow in Surveying, University of Toronto.
1. H. A. Barnett, B.A.Sc., 125 Yorkville Ave., Toronto, Ont.
1.*E. W. Berry, Seaforth, Ont.
1. H. C. Bingham, Moose Jaw, Sask.
City Engineer's Department.
2. D. G. Bisset, B.A.Sc., Porcupine, Ont.
Dome Mines.
1. R. H. H. Blackwell, Biscotasing, Ont.
Resident Engineer, C.N.O.
1.*E. P. Bowman, B.A.Sc., West Montrose, Ont.
2. A. F. Brock, B.A.Sc., Copper Cliff, Ont.
With Canadian Copper Co.

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*Diploma with honours.

1910—*Continued.*

3. M. O. Browne, 319 Lippincott St., Toronto, Ont.
3. J. R. Burgess, B.A.Sc., Buffalo, N.Y.
With Howard Iron Works.
1. N. G. H. Burnham, B.A.Sc., Winnipeg, Man.
Manitoba Hydrographic Survey Staff.
3.*W. C. Cale, B.A.Sc., Keokuk, Ia.
Stone & Webster Engineering Corporation.
2.*A. D. Campbell, B.A.Sc., Cobalt, Ont.
With O'Brien Mine.
3. W. M. Carlyle, B.A.Sc., Toronto, Ont.
With Carlyle Construction Co.
3. N. S. Caudwell, Toronto, Ont.
Student at Law, Osgoode Hall.
3. A. W. Chesnut, B.A.Sc., Toronto, Ont.
1. D. C. Chisholm, B.A.Sc., Winnipeg, Man.
1. H. S. Clark. St. Catharines, Ont.
Welland Ship Canal Staff.
1. J. A. Claveau, Jonquiere, Que.
Assistant Engineer, Jonquiere Pulp Co.
3. L. S. Cockburn, B.A.Sc., Regina, Sask.
Wenger & Cockburn, Consulting Engineers.
3. A. G. Code, B.A.Sc., Hamilton, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
3. C. R. Cole, B.A.Sc., Toronto, Ont.
1. G. A. Colquhoun, B.A.Sc., Vankleek Hill, Ont.
4.*J. H. Craig, B.A.Sc., Toronto, Ont.
Craig & Madill, Architects.
3.*C. D. Dean, B.A.Sc., 14 Wright Ave., Toronto, Ont.
5. A. V. DeLaporte, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. R. L. Dobbin, B.A.Sc., Peterboro', Ont.
3.*W. P. Dobson, B.A.Sc., Toronto, Ont.
Alumni Research Fellow, University of Toronto.
3.*J. M. Duncan, B.A.Sc., Collingwood, Ont.
Collingwood Shipbuilding Co.
1. L. Eadie.
2. V. H. Emery, B.A.Sc., Porcupine, Ont.
Assistant Manager, McIntyre Mines.
3. W. J. Evans, B.A.Sc., Toronto, Ont.
3. H. W. Fairlie, Montreal, Que.
Ry. Dept., The Northern Elec. & Mfg. Co.
3.*C. R. Ferguson, B.A.Sc., Brampton, Ont.
3. J. W. Ferguson, B.A.Sc., Lachine Locks, Que.
With Dominion Bridge Co.
4.*J. B. K. Fisken, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
1. A. W. Fletcher, B.A.Sc., Calgary, Alta.
Department of Public Works.
1.*J. A. Fletcher, Fisher River, Man.
Assistant to E. W. Robinson, D.L.S.
3. F. T. Fletcher, B.A.Sc., Calgary, Alta.
Dept. of Public Works.
3. T. R. C. Flint, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

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*Diploma with honours.

1910—*Continued.*

3. R. C. Follett,
2. J. M. Foreman, B.A.Sc., Lucan, Ont.
1. W. J. Foster.
3.*W. C. Foulds, B.A.Sc. Winnipeg, Man.
   With Canadian Inspection Co.
1. A. Fraser, B.A.Sc., Toronto, Ont.
   With Mackenzie, Mann & Co.
2. J. Fredin, London, Ont.
3. H. Gall, B.A.Sc., 6 Jameson Ave., Toronto, Ont.
1. M. M. Gibson, B.A.Sc., Willowdale, Ont.
   With W. S. Gibson, O.L.S., C.E.
1. J. M. Gibson, B.A.Sc., Toronto, Ont.
   With Chipman & Power.
1. V. A. E. Goad, B.A.Sc., Toronto. Ont.
   Chas. E. Goad Co.
3. V. S. Goodeve, Hamilton, Ont.
   With Canadian Westinghouse Co.
1. H. Goodridge.
2. W. A. Gordon, Sundridge, Ont.
3. V. F. Gourlay, B.A.Sc., Galt, Ont.
3. E. B. Graham, B.A.Sc., Toronto, Ont.
2. R. L. Greene, B.A.Sc., Timmins, Ont.
   Surveyor, Hollinger Mine.
5. J. H. Harris, B.A.Sc., Danforth Ave., Toronto, Ont.
   W. Harris & Co.
1. N. J. Harvie, B.A.Sc., Orillia, Ont.
1. J. G. Helliwell, Windsor, Ont.
   With Canadian Bridge Co.
1. J. F. Henderson, 62 St. Mary St., Toronto, Ont.
3. F. G. Hickling, B.A.Sc., East Pittsburgh, Pa.
   Westinghouse Electric & Manufacturing Co.
1. O. H. Hoover.
2. P. E. Hopkins, B.A.Sc., Porcupine, Ont.
   With Ontario Bureau of Mines.
3.*W. J. Irwin, East Pittsburgh, Pa.
   Apprenticeship Course, Westinghouse Machine Co.
2. F. L. James, B.A.Sc., Tillsonburg, Ont.
1. H. C. Johnston, 509 Palmerston Ave., Toronto, Ont.
1. R. H. Johnston, B.A.Sc., 716 9th St., Edmonton, Alta.
1. J. C. Keith, B.A.Sc., Calgary, Alta.
2.*J. T. King, B.A.Sc., Toronto, Ont.
   Assistant in Mining Engineering, University of Toronto.
3. G. A. Kingstone, B.A.Sc., Montreal, Que.
   With Montreal Engineering Co.
2. G. L. Kirwan, B.A.Sc., Ottawa, Ont.
   Topographical Surveys Dept., Dept. of Interior.
5. P. T. Kirwan, B.A.Sc., Capelton, Que.
   With Nicholls Chemical Co.
1. S. Knight, B.A.Sc., Edmonton, Alta.
   With Driscoll & Knight.
3. E. R. Lawler, Toronto, Ont.
   Toronto Hydro-Electric System.
3.*C. B. Leaver, B.A.Sc., 459 Bloor St., Toronto, Ont.
3. R. G. Lee, B.A.Sc., Parliament Bldgs., Toronto, Ont.
1. J. N. Leitch (deceased).

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*Diploma with honours.

1910—*Continued.*

1. J. C. Longstaff, 208 Close Ave., Toronto, Ont.
3. J. B. MacDonald, B.A.Sc., Winnipeg, Man.
Cznadian Inspection & Testing Laboratories.
2. A. D. Macdonald, B.A.Sc., Toronto, Ont.
1. J. A. Macdonald, B.A.Sc., Toronto, Ont.
Fellow in Surveying, University of Toronto.
1. G. A. Macdonald, B.A.Sc., Fernie, B.C.
1. A. E. MacGregor, B.A.Sc., Simcoe, Ont.
With Chipman & Power.
1. E. G. MacKay, B.A.Sc., Toronto, Ont.
1.*G. G. MacLennan, B.A.Sc., Box 9, Minnedosa, Man.
1. D. D. Macleod, B.A.Sc., Calgary, Alta.
Dept. of the Interior.
3. H. G. MacMurchy, B.A.Sc., 60 Alhambra Ave., Toronto, Ont.
3.*H. J. MacTavish, B.A.Sc., 57 Breadalbane, St., Toronto, Ont.
4. T. C. McBride, B.A.Sc., 501 Colborne St., London, Ont.
1. S. G. McDougall, B.A.Sc., 287 McLaren St., Ottawa, Ont.
1.*T. A. McElhanney, B.A.Sc., Toronto, Ont.
1.*P. J. McGarry, Merritton, Ont.
3.*L. R. McKim, Pittsfield, Mass.
1.*J. McNiven, B.A.Sc., Winnipeg, Man.
Dominion Bridge Co.
3. J. I. McSloy, B.A.Sc., St. Catharines, Ont.
2. A. W. R. Maisonville, B.A.Sc., Pilettes Corners, Ont.
1.*N. Marr, B.A.Sc., Prince Albert, Sask.
With C. H. Mitchell & P. H. Mitchell.
1. W. H. Martin, B.A.Sc., Edmonton, Alta.
2. A. C. Matthews, B.A.Sc., 89 St. George St., Toronto, Ont.
1. C. H. Meader, B.A.Sc., Toronto, Ont.
3.*H. O. Merriman, B.A.Sc., Hamilton, Ont.
Draftsman, Smart-Turner Machine Co., Ltd.
1.*D. J. Miller, Red Deer, Alta.
Alberta Central Ry.
1. F. S. Milligan, B.A.Sc., Toronto, Ont.
3. P. E. Mills, B.A.Sc., 52 Howland Ave., Toronto, Ont.
3. J. P. Morgan, 211 James St. S., Hamilton, Ont.
1. F. R. Mortimer, B.A.Sc.,
1. A. H. Munro, B.A.Sc., Campbellford, Ont.
Trent Valley Canal.
3. J. C. Nash, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
1.*V. A. Newhall, B.A.Sc., Calgary, Alta.
Dept. of Interior.
2.*W. E. Newton, B.A.Sc., 76 College St., Toronto, Ont.
1. F. T. Nichol, B.A.Sc., Winnipeg, Man.
Assistant Engineer to E. W. Noble, Fireproofing Engineer.
1. C. M. O'Neil, B.A.Sc., Erindale-on Credit, Ont.
3. C. E. Palmer, B.A.Sc., Toronto, Ont.
Bell Telephone Co.
3. G. C. Parker, B.A.Sc., Toronto, Ont.
Assoc. Editor "Motor Magazine."
3. K. K. Pearce, B.A.Sc., Port Hope, Ont.
1. A. W. Pearson.
3. C. H. Phillips, B.A.Sc., 157 Margueretta St., Toronto, Ont.

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*Diploma with honours.

1910—*Continued.*

1. D. E. Pye, Cranbrook, B.C.
1. W. S. Ramsay, B.A.Sc., Montreal, Que.
   With Dominion Bridge Co.
3. B. J. Redfern (deceased).
1. H. C. Ritchie, Calgary, Alta.
   Dept. of Public Works.
1. O. W. Ross, B.A.Sc., Toronto, Ont.
1. W. F. B. Rubidge, Toronto, Ont.
3. W. C. Shaw, B.A.Sc., Toronto, Ont.
   Hamilton Gear and Machine Co.
1.*W. C. Smith, B.A.Sc., Victoria, B.C.
   City Engineer's Office.
2. F. L. Smith, Phœnix, B.C.
   Assayer, B.C. Mining Co.
5. G. E. Smith, Guelph, Ont.
2. R. J. Spry, B.A.Sc., Granite, B.C.
   With Eureka Mines, Limited.
2. A. L. Steele, B.A.Sc., Turtle Creek, N.B.
2.*H. M. Steven, B.A.Sc., Porcupine, Ont.
   With Hollinger Mine.
1.*L. I. Stone, Toronto, Ont.
   With G.T. Ry.
3. A. L. Sutherland, B.A.Sc., Peterboro', Ont.
   With Canadian General Electric Co.
3. E. A. Ternan, B.A.Sc., Toronto, Ont.
   Toronto and York Radial Ry. Co.
5.*W. H. Thom, Toronto, Ont.
   Factory Manager, Lyman's Drug & Chemical Co.
3. H. B. Thompson, Wellington, Ont.
3. R. M. A. Thompson, B.A.Sc., Toronto, Ont.
   Hydro-Electric Power Comm.
2.*C. G. Titus, Cobalt, Ont.
   Engineer, Timiskaming Mine.
3. K. M. van Allen, B.A.Sc., 60 Bernard Ave., Toronto, Ont.
1. L. T. Venney, B.A.Sc., Brockville, Ont.
1. N. Wagner, 19 Gerrard St. E., Toronto, Ont.
   Bridge Dept., Canada Foundry Co.
1. R. M. Walker, B.A.Sc., 232 St. James St., Montreal, Que.
   With Walter J. Francis & Co., Consulting Engineers.
2. T. Walton, B.A.Sc., 4 Maryboro Place, London, Ont.
1. G. A. Warrington, B.A.Sc., Cornwall, Ont.
3. M. B. Watson, B.A.Sc., Toronto, Ont.
   With Toronto Electric Light Co.
3.*H. M. White, Lachine Locks, Que.
   With Dominion Bridge Co.
1. J. L. Whitside, B.A.Sc., Toronto, Ont.
4. W. S. Wickens, B.A.Sc., Toronto, Ont.
   Fellow in Drawing, University of Toronto.
3.*G. K. Williams, B.A.Sc., Toronto, Ont.
   Fellow in Drawing, University of Toronto.
1.*W. H. Wilson, B.A.Sc., Toronto, Ont.
   Canada Foundry Co.
3. G. E. Woodley, Charleston, W. Va.
   Central Station Engineer.

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*Diploma with honours.

1910—*Continued.*

1. G. R. Workman, Toronto, Ont.
Fellow in Drawing, University of Toronto.
3. L. A. Wright, B.A.Sc., 278 Jarvis St., Toronto, Ont.
Asst. Engineer, C.P.R.
3.*A. W. Youell, B.A.Sc., Toronto, Ont.
Demonstrator in Mechanical Engineering, University of Toronto.
1. W. S. Young, B.A.Sc., Guelph, Ont.

1911.

5.*J. Aitken, B.A.Sc., Kilbourn Siding, Que.
Canada Cement Co.
1. L. B. Allan, B.A.Sc., Toronto, Ont.
3. E. G. Archer, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Comm.
1. L. A. Badgley, B.A.Sc., Toronto, Ont.
Fellow in Surveying, University of Toronto.
1. T. H. Bartley, B.A.Sc., Toronto, Ont.
Toronto Power Co.
2.* H. L. Batten, Box 564, Douglas, Ariz.
With Copper Queen Smelter.
1. G. L. Berkeley,
3.*J. H. Billings, B.A.Sc., Hamilton, Ont.
Canadian Machinery Corporation.
2.*J. R. Bissett, B.A.Sc., Toronto, Ont.
3. W. O. Boswell, Toronto, Ont.
1. F. Bowman, Lachine, Que.
Dominion Bridge Co.
3. T. W. Brackinreid, B.A.Sc., Peterboro', Ont.
Can. Gen. Electric Co.
2. W. M. Brock, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. W. H. D. Brouse, B.A.Sc., Toronto, Ont.
With Smith, Kerry & Chace.
3. H. Brown, B.A.Sc., Calgary, Alta.
Dept. of the Interior.
3.*E. T. Cain, Toronto. Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. C. S. Cameron, Beaverton, Ont.
1. C. D. Campbell, Galt, Ont.
Town Engineer.
6.*W. W. Chadwick, B.A.Sc.
1. R. B. Chandler, B.A.Sc.. Saskatoon, Sask.
Asst. City Engineer.
1. P. G. Cherry, B.A.Sc., Toronto, Ont.
Circulation Manager "Canadian Engineer."
3. E. F. Chesnut, B.A.Sc., Vancouver, B.C.
1. H. J. Clark, B.A.Sc., Toronto, Ont.
1. F. W. Clark, 669 Spadina Ave., Toronto, Ont.
3. F. S. Cleary, 34 Crawford Ave., Windsor, Ont.
2.*D. B. Cole, B.A.Sc., Copper Cliff, Ont.
Canadian Copper Co.
3.*A. S. Cook, B.A.Sc., Southampton, Ont.
Saugeen Light and Power Co.

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*Degree with honours.

1911—*Continued.*

1. C. W. Cornell, 17 Charles St. E., Toronto, Ont.
1. M. E. Crouch, Sault Ste. Marie, Ont.
   With Lang & Ross.
1. O. F. Cummins, Chepstow, Ont.
3. W. M. Cruthers, B.A.Sc., Peterboro', Ont.
   Can. Gen. Electric Co.
3. T. J. Cunerty, East Pittsburgh, Pa.
   With Westinghouse Elec. Co.
1. C. H. Cunningham, B.A.Sc., Toronto, Ont.
   Engineer, Frank Barber & Co.
1. J. H. Curzon. Moose Jaw, Sask.
   Resident Engineer, C.N.R.
3.*F. K. D'Alton, B.A.Sc., Peterboro', Ont.
1. W. B. Davis, B.A.Sc., Toronto, Ont.
3. F. C. DeGuerre, B.A.Sc., Vancouver, B.C.
   B.C. Electric Co.
3.*F. H. Downing, Winnipeg, Man.
   With Manitoba Bridge & Iron Works.
1. W. B. Dunbar, B.A.Sc., Toronto, Ont.
5. C. H. Eckert, B.A.Sc., Longford, Ont.
   With Standard Chemical Co.
3. J. A. Elliott, B.A.Sc., Niagara Falls, N.Y.
   Castner Electrolytic Alkali Co.
1. G. R. Elliott, B.A.Sc., Toronto, Ont.
1. C. F. Elliott, B.A.Sc., Toronto, Ont.
   Student at Law, Osgoode Hall.
1. K. A. Farrell, B.A.Sc., Toronto, Ont.
3. T. J. Farrelly, Montreal, Que.
   Bell Telephone Co.
1. S. E. Flook, B.A.Sc., Toronto, Ont.
3. C. C. Flynn. Chicago, Ill.
5. E. L. Frankel, B.A.Sc., Toronto, Ont.
   Frankel Bros.
2. E. E. Freeland, B.A.Sc., Ottawa, Ont.
   Hydrographic Surveys Branch.
1. J. R. Freeman, B.A.Sc., Toronto, Ont.
4.*H. P. Frid, Calgary, Alta.
   Building Contractor.
3. R. J. Fuller, B.A.Sc., Toronto, Ont.
   City Architect's Dept.
5.*J. L. Gooderham, B.A.Sc., Toronto, Ont.
3. R. E. Green, B.A.Sc., Toronto, Ont.
3. E. A. Greene, B.A.Sc.,
3. H. G. Hall, Woodstock, Ont.
1. G. M. Hamilton, B.A.Sc., Toronto, Ont.
2. M. B. Heebner, B.A.Sc., Coquitlam, B.C.
   With The Foundation Co.
2. F. I. Helson, Newburgh, Ont.
   With C.N. Ry.
3. H. R. Hill, B.A.Sc., Toronto, Ont.
1. A. J. Huff, B.A.Sc.,
1. K. Huffman, 30 Cowan Ave., Toronto, Ont.
1.*H. Hyatt, B.A.Sc., Toronto, Ont.
   Fellow in Drawing, University of Toronto.

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*Diploma with honours.

1911—*Continued.*

1.*R. H. Jarvis, B.A.Sc., Toronto, Ont.
1.*L. E. Jones, Victoria, B.C.
Office of Surveyor-General.
1.*E. A. Kelly, 119 Maryland St., Winnipeg, Man.
Construction Dept., C.P.R.
3.*M. Kirkwood, B.A.Sc., Ampire, N.J.
Crocker-Wheeler Co.
2.*J. Lanning, B.A.Sc., Cobalt, Ont.
With Buffalo Mines.
2. M. I. Lieberman, B.A.Sc., Toronto, Ont.
3. G. L. Lillie, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
6. A. L. Long, B.A.Sc., Toronto, Ont.
Chemist, Park, Blackwell & Co.
1.*A. W. P. Lowrie, B.A.Sc., Toronto, Ont.
3. W. M. MacAndrew, B.A.Sc., Vancouver, B.C.
Allis-Chalmers-Bullock Co.
3.*R. V. Macaulay, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
2.*J. T. MacBain, Niagara Falls, N.Y.
1.*R. E. A. MacBeth, B.A.Sc., Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1. F. M. Macdonald, B.A.Sc., Toronto, Ont.
Contractor.
3.*W. S. MacKenzie, Woodstock, Ont.
With Canadian Linderman Co., Ltd.
1.*J. G. MacLaurin, B.A.Sc., Toronto, Ont.
1. J. B. McAndrew, B.A.Sc., St. Catharines, Ont.
3.*J. A. McEachren, Strathburn, Ont.
3. R. W. McElroy, B.A.Sc., Toronto, Ont.
3. H. J. McEwen, B.A.Sc., Toronto, Ont.
3.*W. G. McGhie, B.A.Sc., Toronto, Ont.
3. D. A. McKenzie, B.A.Sc., Toronto, Ont.
Meter Inspector, Toronto Hydro-Electric System.
2. A. J. McLaren, B.A.Sc., Vancouver, B.C.
3. A. G. McLeish, Kananaskis, Alta.
Calgary Power Co.
1.*R. A. McLellan, B.A.Sc., Toronto, Ont.
2. W. B. McPherson, B.A.Sc., Toronto, Ont.
Student at Law, Osgoode Hall.
3. A. A. McQueen, B.A.Sc., Winnipeg, Man.
Power Dept., City Hall.
4.*H. H. Madill, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
3. J. C. Martin, B.A.Sc., Toronto, Ont.
3. C. A. Meadows, Box 467, Lachine Locks, Que.
With Dominion Bridge Co.
1. L. G. Mills, B.A.Sc., Toronto, Ont.
5. L. C. Mitchell, Bay City, Mich.
German-American Sugar Co.
2. J. A. Morphy, B.A.Sc., Toronto, Ont.
1. M. H. Murphy, B.A.Sc., Toronto, Ont.
Contractor.

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*Diploma with honours.

1911—*Continued.*

3. E. H. Niebel, B.A.Sc., Montreal, Que.
Northern Electric and Manufacturing Co.
3. C. K. Nixon, B.A.Sc., Detroit, Mich.
3. E. S. Noble, B.A.Sc., Peterboro', Ont.
Canadian General Electric Co.
1. R. K. Northey, B.A.Sc., Toronto, Ont.
2. W. A. O'Flynn, B.A.Sc., Box 564, Douglas, Ariz.
With the Copper Queen Smelter,
1. W. V. Oke, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. J. A. Orr, B.A.Sc., Toronto, Ont.
3. J. S. Parker, B.A.Sc., Burk's Falls, Ont.
3.*J. H. Parkin, Toronto, Ont.
Demonstrator in Mechanical Engineering, University of Toronto.
1.*J. McD. Patton, B.A.Sc., Toronto, Ont.
3. C. L. Pearson, Kananaskis, Alta.
With Calgary Power Co.
2. S. J. Pepler, Huron St., Toronto, Ont.
3.*W. J. Perrin, B.A.Sc., Toronto, Ont.
1. B. W. Pick, B.A.Sc., Regina, Sask.
With Smith & Phillips.
3.*E. H. Porte, Aylmer West, Ont.
1.*F. M. Pratt, B.A.Sc., Toronto, Ont.
4. H. Pullan, Toronto, Ont.
1. L. J. Quinlan, B.A.Sc., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
1.*J. E. Ratz, B.A.Sc., Ottawa, Ont.
Dominion Observatory.
1. F. N. Read, B.A.Sc., Kerrobert, Sask.
Supt. for T. W. Holsworth & Co.
4. E. V. Reid, Toronto, Ont.
With Eden Smith & Sons.
1.*W. A. Richardson, B.A.Sc., Toronto, Ont.
Mackenzie, Mann & Co.
1.*W. E. Robinson, B.A.Sc., Toronto, Ont.
1. H. L. Roblin, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. L. W. Rothery, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
4.*T. L. F. Rowe, Toronto, Ont.
Asst. Engineer, Chipman & Power.
3. A. S. Runciman, Calgary, Alta.
With Canadian Westinghouse Co.
3. F. G. Rutley, B.A.Sc.
1. E. M. Salter, Nipigon, Ont.
Draftsman, C.N.O. Ry.
1. F. R. Scandrett, B.A.Sc., Toronto, Ont.
5.*J. W. Scott, B.A.Sc., Toronto, Ont.
Medical Health Dept.
3. N. D. Seaton, B.A.Sc., Peterboro', Ont.
Canadian General Electric Co.
1. N. Sharpe, Winnipeg, Man.
With Allan Findlay, D.L.S., M.L.S.
4.*P. Sheard, Toronto, Ont.
1.*W. A. Sibbett, Bracebridge, Ont.

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*Diploma with honours.

1911—*Continued.*

2.*C. P. Sills, B.A.Sc., Ottawa, Ont.
Department of the Interior.
1.*K. H. Smith, Kamloops, B.C.
Dept. of the Interior.
3. M. L. Smith, B.A.Sc., Toronto, Ont.
Laboratory Engineer, Massey-Harris Co.
1. R. G. Sneath, Melfort, Sask.
McArthur, Murphy & Underwood.
3.*G. E. Squire, B.A.Sc., Toronto, Ont.
3. W. S. Steele, B.A.Sc., Brooklyn, N.Y.
Brooklyn Rapid Transit Co.
5.*A. E. Stewart, B.A.Sc., Toronto, Ont.
3.*R. O. Stewart, B.A.Sc., Montreal, Que.
Dominion Bridge Co.
3.*R. A. Story, B.A.Sc., Toronto, Ont.
1. C. F. Szammers, 1367 King St., W. Toronto, Ont.
3. R. Taylor, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
1. J. B. Temple, B.A.Sc., Toronto, Ont.
Suburban Construction Co., Ltd.
3. G. C. Thomas, Barrie, Ont.
Assistant Manager, Simcoe Fruits, Ltd.
1. R. D. Torrance, B.A.Sc.,
1. W. G. Tough, B.A.Sc., Toronto, Out.
With Roman Stone Co.
1.*N. Vickers, North Battleford, Sask.
2. J. H. C. Waite, B.A.Sc., Cobalt, Ont.
Drummond Mines, Giroux Lake.
1. W. D. Walcott, B.A.Sc. Toronto, Ont.
Canada Foundry Co.
3. G. L. Wallace, B.A.Sc., Toronto, Ont.
Demonstrator in Physics, University of Toronto.
1. A. Wardell, B.A.Sc., Toronto, Ont.
1. F. E. Watson, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
3.*P. G. Welford, B.A.Sc., Galt, Ont.
Canadian Machinery Corporation.
2. A. G. Wheler, B.A.Sc., Pittsburgh, Pa.
With Edgar M. Moore & Co.
3. G. H. Wilkes, B.A.Sc., Toronto, Ont.
5.*E. R. Williams, Toronto, Ont.
Fellow in Chemistry, University of Toronto.
3.*H. A. Wilson, Glenora, Ont.
Supt., J. C. Wilson & Co., Mechanical Engineers.
1. W. G. Worden, B.A.Sc., Lac Du Bonnet, Man.
Hydrographic Survey.
1.*W. J. T. Wright, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
1. F. H. Wrong, Toronto, Ont.
2. W. H. Wylie, B.A.Sc. Toronto, Ont.
Fellow in Mineralogy, University of Toronto.
3. H. K. Wyman, Peterboro, Ont.
Canadian General Electric Co.
3. L. P. Yorke, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.

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*Diploma with honours.

1911—*Continued.*

1. S. YOUNG, B.A.Sc., Regina, Sask.
Public Works Dept.
3.*A. YOUNG, B.A.Sc., Toronto, Ont.
Demonstrator in Applied Mechanics, University of Toronto.
1. W. E. ZINKAN, Southampton, Ont.
Dominion Land Surveyor.

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*Diploma with honours.

CERTIFICATES.

MINERALOGY AND ASSAYING.

1896. G. JOHNSTON.
1897. E. B. WEBSTER.
1901. G. A. HUNT.

ELECTRICITY.

1896. A. T. TYE, c/o Empresa Hanseatica, Barran quilla, Columbia, South America.
1898. A. N. MCMILLAN, Penetanguishene, Ont.
1900. A. H. SMITH.
1896. E. I. SIFTON, London, Ont.
Manager, London Electric Construction Co.
1903. W. ELWELL (deceased).

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

A

Acres, H. G.	1903
Adams, J. H.	1910
Adams, O. F.	1910
Aitken, J.	1911
Akers, H. G.	1908
Alexander, J. H.	1904
Alison, T. H.	1892
Alison, J. G. R.	1903
Allan, J. R.	1892
Allan, J. L.	1900
Allan, L. F.	1908
Allan, L. B.	1911
Allen, F. G.	1907
Allison, C. B.	1908
Alport, F.	1906
Amos, W. L.	1906
Amsden, W. G.	1910
Anderson, A. G.	1892
Anderson, F. J	1907
Anderson, R. M	1908
Andrews, E.	1897
Angus, H. H	1903
Angus, R. W	1894
Apsey, J. F	1888
Archer, E. G	1911
Ardagh, A. G	1893
Ardagh, E. G. R.	1900
Arens, A. H.	1906
Arens, H. W. (deceased).	1905
Arens, R. J	1908
Arens, E. G	1909
Armer, J. C	1906
Armour, R. H	1905
Armstrong, J	1895
Armstrong, H. V	1909
Ashbridge, W. T.	1888
Augustine, A. P	1907
Austin, E. T.	1909
Aylesworth, C. B	1905

B

Badgley, L. A.	1911
Bain, J. A	1900
Bain, J. W.	1896
Baird, J. A	1910
Baird, W. J	1910
Baker, M. H.	1906
Baldwin, F. W	1906
Ball, E. F.	1888
Ballantyne, H. F.	1893
Banting, E. W	1906
Barber, H. G.	1902
Barber, T.	1899
Barber, W.	1905
Barber, F.	1906
Barber, H. C.	1908
Barker, H. F.	1894
Barley, J. H.	1900
Barnett, H. A.	1910
Barrett, R. H. (deceased).	1901
Barrett, J. H.	1904
Bartley, T. H.	1911
Barry, W. H	1909
Bartlett, E.	1908
Bartley, T. H	1911
Bates, M. (deceased).	1906
Batten, H. L.	1911
Beatty, H. J	1891
Beatty, W. G	1901
Beatty, J. A.	1903
Beauregard, A. T.	1894
Beckstedt, R.D.S.	1909
Bedford, F. J	1908
Begg, W. A	1905
Beith, R. E.	1909
Bell, G. G.	1905–1908
Bellisle, J. P. (deceased).	1906
Bennett, G. A.	1909
Bergey, A. E	1894
Berkeley, G. L.	1911
Berry, E. W	1910
Bertram, G. M	1910
Betts, H. H	1906
Beynon, D. E	1906
Billings, J. H.	1911
Bingham, H. C.	1910
Birchard, E. R	1909
Bissett, D. G.	1910
Bissett, G. W.	1906

Bissett, J. R	1911
Black, G. E	1908
Black, W. D	1909
Blackwell, R. H. H	1910
Blackwood, A. E	1895
Blackwood, W. C	1906
Blair, W. J	1902
Bleakley, J. F	1885
Blizard, D. C	1909
Boeckh, J. C	1906
Bonnell, M. B	1904
Boswell, E. J	1895
Boswell, M. C	1900
Boswell, W. A	1911
Boulton, W. J	1909
Boustead, W. E. (deceased)	1890
Bow, J. A	1897
Bowen, G. H	1909
Bowers, W. J. (deceased)	1901
Bowes, H. F	1908
Bowman, E. P	1910
Bowman, H. J	1885
Bowman, H. D	1907
Bowman, F. M	1890
Bowman, A. M	1886
Bowman, F	1911
Boyd, D. G	1894
Boyd, W. H	1898
Brace, J. H	1908
Brackinreid, T. W	1911
Brady, W. S	1907
Brandon, E. T. J	1901
Brandon, H. E	1906
Bray, L. T	1900
Brebner, G. (deceased)	1895
Brecken, P. R	1908
Brereton, W. P	1901
Breslove, J	1903
Brian, M. E	1906
Bristol, W. M	1905
Broadfoot, F. C	1906
Brock, A. F	1910
Brock, W. M	1911
Brodie, W. M	1895
Broughton, G. H	1907
Broughton, J. T	1902
Brouse, W. H. D	1911
Brown, J. M	1902
Brown, T. W	1906
Brown, D. B	1888
Brown, G. L	1893
Brown, L. L	1895
Brown, T. D	1904
Brown, J. A	1907
Brown, E. I	1908
Brown, C. E	1909
Brown, H	1911
Browne, E. W	1909
Browne, M. O	1910
Bryce, W. F. M	1908
Buchan, P. H	1908
Buchanan, J. A	1909
Bucke, M. A. (deceased)	1890
Bucke, W. A	1894
Bunnell, A. E. K	1906
Burd, J. H	1903
Burgess, E. L	1903
Burgess, J. R	1910
Burns, D	1883
Burns, J. C. (deceased)	1887
Burns, J. E	1909
Burnham, F. W	1904
Burnham, N. G. H	1910
Burnside, J. T. M	1899
Burwash, L. T	1896
Burwash, N. A	1903
Bush, C. E	1907
Byam, F. M	1906

C

Cain, E. T	1911
Calder, J. W	1904
Cale, W. C	1910
Cameron, N. C	1904
Cameron, A	1906
Cameron, M. G	1909
Cameron, C. S	1911
Campbell, A. D	1910
Campbell, A. J	1904
Campbell, A. M	1904
Campbell, W. G	1902
Campbell, A. R	1902
Campbell, R. J	1895
Campbell, G. M	1896
Campbell, W. C	1905
Campbell, N. A	1908
Campbell, R. A	1909
Campbell, A. W	1906
Campbell, J. E	1908
Campbell, C. D	1911
Canniff, C. M	1888
Carey, B	1889
Carlyle, W. M	1910
Carmichael, C. G. (deceased)	1902
Carpenter, H. S	1897
Carroll, A. M	1908
Carscallen, H. R	1908
Carson, W. R	1905
Carter, W. E. H	1898
Carroll, M. J	1906

Caster, J. H.	1907
Caudwell, N. S.	1910
Cavell, E.	1907
Chace, W. G.	1901
Chadwick, R. E. C.	1906
Chadwick, W. W.	1911
Challen, G.	1908
Challies, J. B.	1904
Chalmers, W. J.	1889
Chalmers, J.	1894
Chandler, R. B.	1911
Charlesworth, L. C.	1893
Charlton, H. W.	1897
Chase, A. V.	1905
Cherry, P. G.	1911
Chesnut, A. W.	1910
Chesnut, E. F.	1911
Chesnut, F. H.	1908
Chesnut, V. S.	1909
Chewett, H. J.	1888
Chilver, C. A.	1904
Chilver, H. L.	1904
Chisholm, D. C.	1910
Christie, W.	1902
Christie, U. W.	1904
Christie, A. G.	1901
Chubbuck, L. B.	1899
Clark, J.	1900
Clark, G. T.	1906
Clark, F. W.	1911
Clark, H. J.	1911
Clarke, F. F.	1903
Claveau, J. A.	1910
Cleary, F. S.	1911
Clement, W. A.	1889
Clement, S. R. A.	1905
Cline, C. G.	1909
Clothier, G. A.	1899
Coates, P. C.	1904
Cockburn, J. R.	1901
Cockburn, L. S.	1910
Code, A. G.	1910
Code, S. B.	1904
Code, T. F. (deceased)	1904
Cole, D. B.	1911
Cole, W. E. (deceased)	1908
Cole, C. R.	1910
Colhoun, G. A.	1906
Collett, W. C.	1908
Collinson, J. G.	1909
Colquhoun, G. A.	1910
Coltham, G. W.	1909
Conlon, F. T.	1902
Connell, C. B. B.	1907
Connor, H. V.	1902
Connor, A. W.	1895
Cooch, H. A.	1909
Cook, A. S.	1911
Cook, W. A. Mc.	1906
Cooper, C.	1899
Corman, W. E.	1909
Cornell, C. W.	1911
Corrigan, G. D. (deceased)	1890
Corrigan, T. E.	1905
Cory, R. Y.	1908
Coulson, C. L.	1903
Cousins, E. L.	1906
Coulthard, R. M.	1899
Cowan, W. A.	1904
Cowper, G. C.	1907
Coyne, H.	1908
Craig, J. A.	1899
Craig, J. H.	1910
Craig, S. E.	1904
Creighton, A. G.	1906
Crerar, S. R.	1904
Crosby, N. L. R.	1905
Crosby, T. H.	1909
Crouch, M. E.	1911
Cruthers, W. M.	1911
Culbert, M. T. (deceased)	1902
Culbert, J. V.	1907
Cumming, R.	1902
Cumming, J. D.	1908
Cummins, O. F.	1911
Cunerty, T. J.	1911
Cunningham, C. H.	1911
Cunningham, R. H.	1909
Currie, W. M.	1904
Curzon, J. H.	1911

D

Dahl, A. D.	1908
Dallyn, F. A.	1909
D'Alton, F. K.	1911
Daniels, W. N.	1906
Danks, F. A.	1908
Danks, C. N.	1909
Dann, E. M.	1909
Darling, E. H.	1898
Darroch, J.	1908
Davis, R.	1907
Davis, A. I.	1909
Davis, H. W.	1909
Davis, H. C.	1909
Davis, W. B.	1911
Davison, J. E.	1900
Davison, A. E.	1903
Dawson, I. H.	1909
Deacon, T. R.	1891

Dean, C. D	1910
Death, N. P. F	1906
DeCew, J. A	1896
De Guerre, F. C	1911
Delahaye, W. H	1909
De Laporte, A. V	1910
Depew, H. H	1904
Derham, W. P	1909
Dickson, G. W	1900
Dickinson, E. D	1900
Dill, C. W	1891
Dixon, H. A	1900
Dobbin, R. L	1910
Dobson, W. P	1910
Dobie, J. S	1895
Dodds, W. A	1909
Doorly, H. C	1908
Douglas, R. H	1908, 1909
Douglas, W. E	1902
Downing, F. H	1911
Duff, J. A. (deceased)	1890
Duff, W. A	1901
Duggan, G. H	1883
Dunbar, W. B	1911
Duncan, J. M	1910
Dundass, C. S	1906
Dunlop, R. J	1902
Dunn, T. H	1893
Dyer, F. C	1908

E

Eagleson, F. M	1908
Eason, D. E	1901
Eckert, C. H	1911
Edwards, W. M	1902
Edwards, C	1908
Elliot, J. A	1911
Elliott, G. R	1911
Elliott, C. F	1911
Elliott, H. P	1896
Elliott, J. C	1899
Elder, A. J	1904
Elwell, W. (deceased)	1902
Emery, V. H	1910
Empey, J. M	1902
English, A. B. (deceased)	1890
Evans, S. D	1907
Evans, S. L	1908
Evans, W. J	1910
Ewart, J. A	1894
Ewart, F. R	1907
Ewing, E. O	1908

F

Fairbairn, J. M. R	1893
Fairchild, C	1892
Fairlie, H. W	1910
Falconer, F. S	1909
Fargey, T. A	1909
Farrell, K. A	1911
Farrelly, T. J	1911
Fear, S. L	1906
Fensom, C. J	1903
Ferguson, C. R	1910
Ferguson, G. H	1905
Ferguson, J. B	1909
Ferguson, J. W	1910
Fergusson, A. T	1909
Fierheller, H. S. (deceased)	1905
Fingland, W	1893
Fisken, J. B. K	1910
Flanagan, O. L	1908
Fleck, J. G	1904
Fleming, G. R. S	1907
Fletcher, A. W	1910
Fletcher, F. T	1910
Fletcher, J. A	1910
Flint, C	1908
Flint, T. R. C	1910
Flook, S. E	1911
Flynn, C. C	1911
Follett, R. C	1910
Forbes, D. L. H	1902
Ford, A. L	1904
Foreman, J. M	1910
Forrester, C	1893
Forman, W. E	1899
Forward, E. A	1897
Forward, C. C	1906
Foster, A. H	1908
Foster, W. J	1910
Foulds, W. C	1910
Francis, Walter J	1893
Francis, G. C	1908
Frankel, E. L	1911
Fraser, A	1910
Fredin, J	1910
Freeland, E. E	1911
Freeman, T. E	1909
Freeman, J. R	1911
Frid, H. P	1911
Frost, E. R	1909
Fuce, E. O	1903
Fuller, R. J	1911
Fullerton, C. H	1900
Fux, P. C	1907

G

Gaby, F. A	1903
Gagne, S. (deceased)	1901
Gall, H	1910
Galletly, J. S	1907
Galt, G	1907
Gardner, J. C	1903
Garland, M. L	1890
Garrow, A. B	1907
Gear, S. S	1908
George, R. E	1903
Gibbons, J	1888
Gibson, A. E	1902
Gibson, J. M	1910
Gibson, M. M	1910
Gibson, N. R	1901
Gibson, W. S	1904
Gillespie, P	1903
Gillies, A	1907
Glover, A. E	1909
Goad, V. A. E	1910
Goldie, A. R	1893
Goodall, J. N	1904
Gooderham, A. E	1909
Gooderham, J. L	1911
Goodeve, V. S	1910
Goodwin, A. C	1902
Goodwin, J. B	1892
Gordon, J. P	1904
Gordon, W. A	1910
Gourlay, V. F	1910
Gourlay, W. A	1903
Graham, C. W	1906
Graham, E. B	1910
Graham, G. W	1907
Graham, D. A	1909
Grant, W. F	1898
Grant, R. R	1909
Grasett, C. S	1907
Grassie, C. A	1908
Gray, A. T	1897
Gray, W. W	1904
Gray, A	1904
Gray, J. E	1909
Green, R. E	1911
Greene, E. A	1911
Greene, P. W	1906
Greene, G. E. D	1909
Greene, R. L	1910
Greene, W. H	1909
Greenwood, W. K	1904
Guernsey, F. W	1895
Gulley, C. L	1908
Gunn, W. W	1909
Gurney, W. C	1896
Guest, W. S	1900
Guy, E	1899

H

Hackner, J. W	1908
Hagarty, R. E. W	1907
Haight, H. V	1896
Hall, H. G	1911
Hall, K	1907
Hamer, A. T. E	1901
Hamilton, J. F	1903
Hamilton, C. B	1906
Hamilton, C. T	1907
Hamilton, G. M	1911
Hanley, S. C	1893
Hanes, G. S	1903
Hanning, G. F	1889
Hara, L. D	1904
Hare, R. A	1907
Harcourt, F. Y	1903
Hare, W. A	1899
Harkness, A. H	1895
Harkness, A. L	1906
Harper, C. J	1909
Harris, C. J	1904
Harris, J. H	1910
Harrison, R. L	1906
Harrison, F. W	1905
Harrison, E	1906
Hartney, J. C	1906
Harvey, C	1901
Harvey, D. W	1909
Harvie, N. J	1910
Haultain, H. E. T	1889
Haviland, F. L	1908
Hay, C. O	1909
Hayes, L. J	1903
Heebner, M. B	1911
Helliwell, J. G	1910
Helson, F. I	1901
Hemphill, W	1900
Hemphill, J	1909
Henderson, E. E	1885
Henderson, F. D	1903
Henderson, J. F	1910
Henderson, S. E M	1900
Henderson, C. D	1908
Hendry, M. C	1905
Henry, J. A	1900
Henwood, C	1902
Herald, W. J	1894
Hermon, E. B	1886
Heron, J. B	1904
Hertzberg, C. S. L	1905

Hett, S.	1906
Hewson, W. G.	1905
Hickling, F. G.	1910
Hicks, W. A. B.	1897
Hill, E. M. M.	1904
Hill, S. N.	1904
Hill, H. O.	1907
Hill, H. R.	1911
Hillis, C. R.	1906
Hogarth, G.	1909
Hogg, T. H.	1907
Holcroft, H. S.	1900
Holmes, A. E.	1909
Holmes, C. R.	1909
Hookway, C. W.	1906
Hopkins, P. E.	1910
Hopkins, R. H.	1906
Horton, J. A.	1903
Hoshal, G. C.	1909
Houston, R. S.	1906
Huber, W.	1906
Huether, D. J.	1908
Huether, A. D.	1908
Huff, A. J.	1911
Huffman, K.	1911
Hughes, C.	1909
Hull, H. S.	1895
Hull, A. H.	1906
Hunter, A. E.	1909
Hunter, A. N.	1908
Hutcheon, J.	1890
Hutton, C. H.	1907
Hyatt, H.	1911
Hyland, H. M.	1907
Hyman, E. W.	1907

I

Iler, S. B.	1908
Ingles, C. J.	1904
Innes, W. L.	1890
Ireland, L. G.	1907
Irvine, J.	1889
Irwin, H.	1909
Irwin, W. J.	1910
Isbister, J.	1909

J

Jackes, F. P.	1909
Jackson, J. G.	1903
Jackson, F. C.	1901
Jackson, W.	1907
Jackson, C. B.	1907
Jackson, J. E.	1909
James, O. S.	1891
James, D. D.	1889
James, E. A.	1904
James, E. W.	1909
James, F. L.	1910
Jarvis, R. H.	1911
Jepson, W. C.	1906
Jeffrey, D.	1882
Jermyn, P. V.	1904
Job, H. E.	1894
Johnson, C. C.	1909
Johnston, D. M.	1902
Johnston, H.	1903
Johnston, H. C.	1910
Johnston, A. C.	1894
Johnston, S. M.	1894
Johnston, H. A.	1900
Johnston, J. C.	1900
Johnston, J. A.	1900
Johnston, C. K.	1903
Johnston, R. H.	1910
Johnston, W. J.	1909
Johnston, C.	1906
Johnston, C. E.	1909
Johnston, J. T.	1908
Jones, J. E.	1894
Jones, L. E.	1911
Jones, G. S.	1905
Jones, G. R.	1906
Jones, T.	1906
Jupp, A. E.	1906

K

Kay, E. W.	1907
Keefe, W. S. H.	1904
Keele, J.	1893
Keffer, A. H. E.	1909
Keith, J. C.	1910
Keith, D. F.	1907
Keith, H. P.	1907
Kelly, E. A.	1911
Kemp, J. B. O.	1909
Kennedy, J. H.	1882
Kennedy, H. G.	1908
Keppy, J. D.	1906
Key, W. R.	1909
Keys, W. R.	1908
King, C. F.	1897
King, J. T.	1910

Kinghorn, A. A	1907
Kingstone, G. A	1910
Kirkland, W. C	1884
Kirkwood, M	1911
Kirwan, G. L	1910
Kirwan, P. T	1910
Klingner, L. W	1907
Klotz, H. N	1909
Knight, R. H	1902
Knight, S	1910
Kormann, J. S	1898
Kribs, G	1905

L

Laidlaw, J. T	1893
Laidlaw, A	1901
Laing, W. F. (deceased)	1896
Laing, A. T	1892
Laing, P. A	1905
Laird, R	1886
Lamb, F. C	1907
Lamont, A. W	1909
Lane, A. (deceased)	1891
Lang, A. G	1903
Lang, J. L	1906
Langley, C. E	1892
Langmuir, F. L	1902
Langmuir, C. B	1909
Lanning, J	1911
Larkworthy, W. J. (deceased)	1904
Laschinger, E. J	1892
Lash, F. L	1893
Lash, N. M	1894
Latham, R	1899
Latornell, A. J	1903
Latornell, A	1905
Lavrock, J. E	1898
Lawler, E. R	1910
Lawson, W. L	1892
Lawrie, R. R. (deceased)	1896
Leaver, C. B	1910
Lee, W. A. (deceased)	1892
Lee, R. G	1910
Leighton, J. W	1905
Leitch, J. N. (deceased)	1910
Lennox, A. E	1909
LePan, A. D	1907
Leslie, J. N. M	1908
Lewis, F. C	1908
Lieberman, M	1911
Lillie, G. L	1911
Lindsay, J. H	1907
Linton, A. P	1906
Lloyd, N. C. A	1909
Long, A. L	1911
Longstaff, J. C	1910
Lott, A. E	1887
Loucks, R. W. E	1909
Loudon, T. R	1905
Lowrie, A. W. P	1911
Ludgate, B. A	1885
Lumbers, W. C	1901
Lynar, H. R	1908

Mac

Macallum, A. F	1893
MacAndrews, W. M	1911
Macaulay, R. V	1911
MacBain, J. T	1911
MacBeth, C. (deceased)	1896
MacBeth, R. E. A	1911
Macdonald, A. D	1910
Macdonald, J. B	1910
Macdonald, J. A	1910
Macdonald, G. A	1910
Macdonald, F. M	1911
Macdougall, A. C	1901
Macfarlane, E. D	1909
MacGregor, A. E	1910
MacKay, A. G	1907
MacKay, J. T	1902
MacKay, E. G	1910
MacKenzie, K. A	1906
MacKenzie, W. S	1911
Mackinnon, J. G	1909
Mackinnon, W	1906
Mackintosh, D	1898
Maclachlan, W	1906
MacLachlan, W. A	1909
MacLaurin, J. G	1911
Maclean, B. A	1909
MacLennan, G. G	1910
MacLeod, G	1907
MacLeod, D. D	1910
MacMillan, G	1901
MacMurchy, J. A	1896
MacMurchy, H. G	1910
Macpherson, N. W	1909
MacTavish, H. J	1910

Mc

McAllister, J. E	1891
McAllister, A. L	1893
McAlpine, D. D	1909
McAndrews, J. B	1911
McAree, J. (deceased)	1882
McArthur, R. E	1900
McArthur, A. S	1909
McAuslan, H. J	1903
McBride, A. H	1902
McBride, T. C	1910
McCollum, C. R	1909
McConnell, A. W	1906
McCordick, A. S	1909
McCuaig, O. B	1904
McCuaig, P. J	1909
McCulloch, A. L	1887
McCurdy, J. A. D	1907
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THE

CALENDAR

OF THE

University of Toronto

FACULTY OF
APPLIED SCIENCE AND ENGINEERING

1914-1915

UNIVERSITY PRESS
TORONTO

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Mon.	2	9	16	23	30
Tues.	3	10	17	24	31
Wed.	4	11	18	25	..
Thur.	5	12	19	26	..
Fri.	6	13	20	27	..
Sat.	7	14	21	28	..

APRIL

Sun.		5	12	19	26
Mon.		6	13	20	27
Tues.		7	14	21	28
Wed.	1	8	15	22	29
Thur.	2	9	16	23	30
Fri.	3	10	17	24	..
Sat.	4	11	18	25	..

MAY

Sun.		3	10	17	24	31
Mon.		4	11	18	25	..
Tues.		5	12	19	26	..
Wed.		6	13	20	27	..
Thur.		7	14	21	28	..
Fri.	1	8	15	22	29	..
Sat.	2	9	16	23	30	..

JUNE

Sun.		7	14	21	28
Mon.	1	8	15	22	29
Tues.	2	9	16	23	30
Wed.	3	10	17	24	..
Thur.	4	11	18	25	..
Fri.	5	12	19	26	..
Sat.	6	13	20	27	..

JULY

Sun.		5	12	19	26
Mon.		6	13	20	27
Tues.		7	14	21	28
Wed.	1	8	15	22	29
Thur.	2	9	16	23	30
Fri.	3	10	17	24	31
Sat.	4	11	18	25	..

AUGUST

Sun.		2	9	16	23	30
Mon.		3	10	17	24	31
Tues.		4	11	18	25	..
Wed.		5	12	19	26	..
Thur.		6	13	20	27	..
Fri.		7	14	21	28	..
Sat.	1	8	15	22	29	..

SEPTEMBER

Sun.		6	13	20	27
Mon.		7	14	21	28
Tues.	1	8	15	22	29
Wed.	2	9	16	23	30
Thur.	3	10	17	24	..
Fri.	4	11	18	25	..
Sat.	5	12	19	26	..

OCTOBER

Sun.		4	11	18	25
Mon.		5	12	19	26
Tues.		6	13	20	27
Wed.		7	14	21	28
Thur.	1	8	15	22	29
Fri.	2	9	16	23	30
Sat.	3	10	17	24	31

NOVEMBER

Sun.	1	8	15	22	29
Mon.	2	9	16	23	30
Tues.	3	10	17	24	..
Wed.	4	11	18	25	..
Thur.	5	12	19	26	..
Fri.	6	13	20	27	..
Sat.	7	14	21	28	..

DECEMBER

Sun.		6	13	20	27
Mon.		7	14	21	28
Tues.	1	8	15	22	29
Wed.	2	9	16	23	30
Thur.	3	10	17	24	31
Fri.	4	11	18	25	..
Sat.	5	12	19	26	..

1915 CALENDAR 1915

JANUARY

Sun.		3	10	17	24	31
Mon.		4	11	18	25	..
Tues.		5	12	19	26	..
Wed.		6	13	20	27	..
Thur.		7	14	21	28	..
Fri.	1	8	15	22	29	..
Sat.	2	9	16	23	30	..

FEBRUARY

Sun.		7	14	21	28
Mon.	1	8	15	22	..
Tues.	2	9	16	23	..
Wed.	3	10	17	24	..
Thurs.	4	11	18	25	..
Fri.	5	12	19	26	..
Sat.	6	13	20	27	..

MARCH

Sun.		7	14	21	28
Mon.	1	8	15	22	29
Tues.	2	9	16	23	30
Wed.	3	10	17	24	31
Thur.	4	11	18	25	..
Fri.	5	12	19	26	..
Sat.	6	13	20	27	..

APRIL

Sun.		4	11	18	25
Mon.		5	12	19	26
Tues.		6	13	20	27
Wed.		7	14	21	28
Thur.	1	8	15	22	29
Fri.	2	9	16	23	30
Sat.	3	10	17	24	..

MAY

Sun.		2	9	16	23	30
Mon.		3	10	17	24	31
Tues.		4	11	18	25	..
Wed.		5	12	19	26	..
Thur.		6	13	20	27	..
Fri.		7	14	21	28	..
Sat.	1	8	15	22	29	..

JUNE

Sun.		6	13	20	27
Mon.		7	14	21	28
Tues.	1	8	15	22	29
Wed.	2	9	16	23	30
Thur.	3	10	17	24	..
Fri.	4	11	18	25	..
Sat.	5	12	19	26	..

JULY

Sun.		4	11	18	25
Mon.		5	12	19	26
Tues.		6	13	20	27
Wed.		7	14	21	28
Thur.	1	8	15	22	29
Fri.	2	9	16	23	30
Sat.	3	10	17	24	31

AUGUST

Sun.	1	8	15	22	29
Mon.	2	9	16	23	30
Tues.	3	10	17	24	31
Wed.	4	11	18	25	..
Thur.	5	12	19	26	..
Fri.	6	13	20	27	..
Sat.	7	14	21	28	..

SEPTEMBER

Sun.		5	12	19	26
Mon.		6	13	20	27
Tues.		7	14	21	28
Wed.	1	8	15	22	29
Thur.	2	9	16	23	30
Fri.	3	10	17	24	..
Sat.	4	11	18	25	..

OCTOBER

Sun.		3	10	17	24	31
Mon.		4	11	18	25	..
Tues.		5	12	19	26	..
Wed.		6	13	20	27	..
Thur.		7	14	21	28	..
Fri.	1	8	15	22	29	..
Sat.	2	9	16	23	30	..

NOVEMBER

Sun.		7	14	21	28
Mon.	1	8	15	22	29
Tues.	2	9	16	23	30
Wed.	3	10	17	24	..
Thur.	4	11	18	25	..
Fri.	5	12	19	26	..
Sat.	6	13	20	27	..

DECEMBER

Sun.		5	12	19	26
Mon.		6	13	20	27
Tues.		7	14	21	28
Wed.	1	8	15	22	29
Thur.	2	9	16	23	30
Fri.	3	10	17	24	31
Sat.	4	11	18	25	..

CALENDAR 1914-1915.

1914—	Sept.	1	Applications for Registration received.
			Last day for receiving applications for Supplemental Examinations.
		18	Supplemental Examinations begin.
		25	Meeting of Faculty Council.
		28	Enrolment.
		29	First Term begins.
			Last day for receiving Vacation Work.
			President's address to students at 3 p.m.
	Oct.	2	Meeting of Faculty Council.
		7	Meeting of Engineering Society.
		21	Meeting of Engineering Society.
	Nov.	4	Meeting of Engineering Society.
		6	Meeting of Faculty Council.
		18	Meeting of Engineering Society.
	Dec.	2	Meeting of Engineering Society.
		4	Meeting of Faculty Council.
		16	Meeting of Engineering Society.
		18	First Term ends at 12 noon.
1915—	Jan.	5	Second Term begins.
			Last day for receiving Theses for B.A.Sc.
		8	Meeting of Faculty Council.
		13	Meeting of Engineering Society.
		27	Meeting of Engineering Society.
	Feb.	5	Meeting of Faculty Council.
		10	Meeting of Engineering Society.
		24	Meeting of Engineering Society.
	Mar.	5	Meeting of Faculty Council.
		10	Meeting of Engineering Society.
		12	Annual elections of Engineering Society.
		24	Annual Meeting of Engineering Society.
	April	1	Meeting of Faculty Council.
		2	Good Friday—Building closed.
		8	Lectures and practical work close.
		12	Annual Examinations begin.
	May	7	Meeting of Faculty Council.
	June	11	Annual Commencement.

The buildings will be closed on all public holidays and daily at noon during July and August.

University of Toronto.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

President...............R. A. Falconer, LL.D., D.Litt., C.M.G.
Dean of Faculty......................J. Galbraith, M.A., LL.D.
Secretary of Faculty..........................A. T. Laing, B.A.Sc.
Bursar..................................F. A. Mouré, Esq.

G. R. Anderson, M.A., *Associate Professor of Physics.*	35 Chicora Ave.
R. W. Angus, B.A.Sc., Mem. Am. Soc. M.E. *Professor of Mechanical Engineering.*	42 Howland Ave.
E. G. R. Ardagh, B.A.Sc., *Assistant Professor of Chemistry.*	Chem. & Mining Bldg.
J. W. Bain, B.A.Sc., *Associate Professor of Applied Chemistry.*	393 Brunswick Ave.
M. C. Boswell, M.A., Ph.D., *Assistant Professor of Organic Chemistry.*	100 Dewson St.
J. R. Cockburn, B.A.Sc., A.M. Can. Soc. C.E., *Assistant Professor of Descriptive Geometry.*	100 Walmer Rd.
S. R. Crerar, B.A.Sc., D.L.S., *Lecturer in Surveying.*	122 Grenadier Rd.
W. Hodgson Ellis, M.A., M.B., *Professor of Applied Chemistry.*	74 St. Alban St.
J. Galbraith, M.A., LL.D., *Professor of Engineering.*	Chem. & Mining Bldg.
P. Gillespie, M.Sc., A.M. Can. Soc. C.E., *Associate Professor of Applied Mechanics.*	358 Davenport Rd.
G. A. Guess, M.A., *Professor of Metallurgy.*	Oakville.
H. E. T. Haultain, C.E., M.I.M.M., *Professor of Mining Engineering.*	63 Heath St.
J. McGowan, B.A., B.A.Sc., *Associate Professor of Applied Mechanics.*	Engineering Building.
H. W. Price, B.A.Sc., *Associate Professor of Electrical Engineering.*	474 Palmerston Ave.
T. R. Rosebrugh, M.A., *Professor of Electrical Engineering.*	92 Walmer Rd.
L. B. Stewart, O.L.S., D.T.S., *Professor of Surveying & Geodesy.*	161 Admiral Rd.

J. J. Traill, B.A.Sc., *Lecturer in Hydraulics.*	34 Wolfrey Ave.
W. M. Treadgold, B.A., *Assistant Professor of Surveying.*	13 Woodlawn Ave. E.
C. H. C. Wright, B.A.Sc., Mem. O.A.A., *Professor of Architecture.*	419 Markham St.
C. R. Young, B.A.Sc., M. Can. Soc. C.E., *Assistant Professor of Structural Engineering.*	98 Hilton Ave.

Sessional Appointments.

O. F. Adams, B.A.Sc., *Demonstrstor in Electrical Engineering.*	132 Ulster St.
R. J. Allen, B.A.Sc., *Demonstrator in Electrical Engineering.*	325 Davenport Rd.
L. M. Arkley, M.Sc., A.M. Can. Soc. C.E., *Lecturer in Mechanical Engineering.*	61 Indian Rd. Cres.
L. A. Badgley, B.A.Sc., *Demonstrator in Drawing.*	1055 Bathurst St.
P. A. Balbaud, B.esL., *Lecturer in French.*	626 Huron St.
J. L. Banks, *Instructor in Modelling.*	304 Jarvis St.
E. W. Banting, B.A.Sc., *Lecturer in Surveying.*	330 St. George St.
W. S. Bishop, A.B. (Cornell), *Lecturer in Metallurgical Engineering.*	69 Havelock St.
W. B. Buchanan, B.A.Sc., *Demonstrator in Electrical Engineering.*	104 Charles St. W.
H. Brownlee, B.A., *Demonstrator in Electrochemistry.*	404 Dovercourt Rd.
J. T. Burt-Gerrans, B.A., Phm.B., *Lecturer in Electrochemistry.*	46 Dewson St.
J. B. Coghill, A.R.C.Sc.I., *Fellow in Chemistry.*	118 Bellevue Ave.
J. H. Curzon, *Fellow in Surveying.*	1964 Queen St. E.
W. A. Davidson, B.A., *Fellow in Chemistry.*	54 Alexander St.
A. R. Duff, *Fellow in Chemistry.*	211 Fern Ave.
F. C. Dyer, B.A.Sc., *Demonstrator in Mining.*	358 Conduit St.
W. S. Ferguson, C.A., *Lecturer in Accountancy.*	52 Tranby Ave.
J. S. Galbraith, B.A.Sc., *Demonstrator in Drawing.*	57 Prince Arthur Ave.

W. S. Guest, B.A.Sc., *Lecturer in Electrical Engineering.*	30 McMaster Ave.
R. H. Hopkins, B.A.Sc., *Lecturer in Electrical Engineering.*	85 St. George St.
J. T. Howard, B.A.Sc., *Demonstrator in Drawing.*	137 Madison Ave.
M. B. Jackson, B.Sc., *Lecturer in Mechanical Engineering.*	54 Castle Frank Rd.
C. W. Jefferys, A.R.C.A., Mem. O.S.A., Instructor in Freehand Drawing and Water Colour.	York Mills.
J. T. King, B.A.Sc., *Demonstrator in Mining.*	346 Woodville Ave.
J. T. Lagergren, M.E., *Lecturer in Machine Design.*	148 Carlton St.
T. R. Loudon, B.A.Sc., *Lecturer in Metallurgy.*	107 Sheldrake Rd.
H. M. Lancaster, B.A.Sc., *Lecturer in Sanitary Chemistry.*	22 Palmerston Gardens.
J. M. Langstaff, C.A., F.I.A., E.A.S., *Lecturer in Accountancy.*	604 Huron St.
J. M. Lyle, *Instructor in Architectural Design.*	14 Leader Lane.
H. H. Madill, B.A.Sc., *Demonstrator in Drawing.*	23 Grange Rd.
R. J. Marshall, B.A.Sc., *Demonstrator in Applied Mechanics.*	148 Quebec Ave.
W. H. Martin, B.A.Sc., *Demonstrator in Drawing.*	532 Euclid Ave.
A. W. McConnell, B.A.Sc.,	
P. W. Mueller, B.A., *Instructor in German.*	96 Warren Rd.
W. C. Murdie, B.A.Sc., *Fellow in Physics.*	249 McCaul St.
J. H. Parkin, B.A.Sc., *Demonstrator in Mechanical Engineering.*	43 Brookmount Rd.
J. T. Ransom, B.A.Sc., *Demonstrator in Surveying.*	5068 Dundas St.
L. J. Rogers, B.A.Sc., *Demonstrator in Chemistry.*	528 Brunswick Ave.
L. T. Rutledge, B.A.Sc., *Demonstrator in Drawing.*	320 Concord Ave.
F. R. Scandrett, B.A.Sc., *Fellow in Surveying.*	329 Mutual St.

W. J. Smither, B.A.Sc., *Demonstrator in Drawing.*	42 Carlton St.
G. E. Squire, B.A.Sc., *Fellow in Drawing.*	80 Gerrard St. E.
A. L. Steele, B.A.Sc., *Assistant in Mining Engineering.*	346 Woodville Ave.
R. Taylor, B.A.Sc., *Demonstrator in Electrical Engineering.*	373 Roxton Rd.
D. J. Thomson, B.A.Sc., *Demonstrator in Mechanical Engineering.*	212 Major St.
G. L. Wallace, B.A.Sc., *Demonstrator in Physics.*	58 Parkway Ave.
F. E. Watson, B.A.Sc., *Demonstrator in Drawing.*	447 Manning Ave.
W. S. Wickens, B.A.Sc., *Fellow in Drawing.*	89 Kendal Ave.
G. K. Williams, B.A.Sc., *Demonstrator in Drawing.*	147 Gore Vale Av.
G. R. Workman, *Fellow in Drawing.*	1 Wood St.
A. Young, B.A.Sc., *Demonstrator in Applied Mechanics.*	85 Lappin Ave.
A. R. Zimmer, B.A.Sc., *Lecturer in Electrical Engineering.*	32 Delaware Ave.

MEMBERS OF OTHER FACULTIES GIVING INSTRUCTION TO STUDENTS IN APPLIED SCIENCE.

F. B. Allan, M.A., Ph.D., *Associate Professor of Organic Chemistry.*	380 Brunswick Ave.
J. A. Amyot, M.B., *Professor of Hygiene.*	4 Laburnum Ave.
Alfred Baker, M.A., *Professor of Mathematics.*	81 Madison Ave.
B. A. Bensley, B.A., Ph.D., *Associate Professor of Zoology.*	316 Brunswick Ave.
C. A. Chant, M.A., Ph.D., *Associate Professor of Astro-Physics.*	201 Madison Ave.
A. P. Coleman, M.A., Ph.D., *Professor of Geology.*	476 Huron St.
A. T. DeLury, M.A., *Professor of Mathematics.*	University of Toronto.
J. H. Faull, B.A., Ph.D., *Associate Professor of Botany.*	102 Yorkville Ave.

A. G. Huntsman, B.A., M.B., *Lecturer in Biology.*	210 Fern Ave.
W. J. Loudon, B.A., *Professor of Mechanics.*	133 Walmer Rd.
M. A. Mackenzie, M.A., F.I.A., *Associate Professor of Mathematics.*	1 Bellwoods Park.
W. L. Miller, B.A., Ph.D., *Professor of Physical Chemistry.*	50 St. Alban St.
G. H. Needler, B.A., Ph.D., (Leipsic) *Assoc. Professor of German.*	103 Bedford Rd.
W. A. Parks, B.A., Ph.D., *Associate Professor of Geology.*	69 Albany Ave.
A. L. Parsons, B.A., *Assistant Professor of Mineralogy.*	22 Kendal Ave.
T. L. Walker, M.A., Ph.D., *Professor of Mineralogy and Petrography.*	62 Maple Ave.
E. M. Walker, B.A., M.B., *Lecturer in Zoology.*	67 Alcina Ave.

Sessional Appointments.

S. Beatty, M.A., *Lecturer in Mathematics.*	22 Alvin Ave.
J. H. Birkenshaw, B.A., *Fellow in Mathematics.*	334 Huron St.
H. V. Ellsworth, B.A.,	64 St. Alban St.
A. C. Hazen, B.A., *Fellow in Geology.*	
A. Maclean, B.A., *Lecturer in Geology.*	102 College St.
I. R. Pounder, B.A., *Lecturer in Mathematics.*	239 Carlton St.
J. McQueen, B.A., *Fellow in Mathematics.*	660 Bathurst St.
J. E. Thomson, B.A.Sc., *Demonstrator in Mineralogy.*	57 Queen's Park.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

Historical Sketch.

The Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practical Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February, 1877.

By the scheme thus approved of, Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1889 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By the terms of this order the management and discipline of the School was vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degrees in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal, the Professors and Lecturers, together with the Registrar.

By the University Act, 1906, the School of Practical Science was united to the University of Toronto as its Faculty of Applied Science and Engineering.

GRADUATING DEPARTMENTS.

There are eight regular Departments of Instruction leading to the degree of Bachelor of Applied Science:—

1. Civil Engineering.
2. Mining Engineering.
3. Mechanical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.
7. Electrical Engineering.
8. Metallurgical Engineering.

The instruction given in these departments extends over a period of four years and is designed to give the student a thorough knowledge of the scientific principles underlying the practice in the several professions, and also such training as may make him immediately useful when he commences professional work.

DEGREE OF MASTER OF APPLIED SCIENCE (M.A.Sc.).

(For requirements, see page 74.)

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem. E.), as the case may be, subject to the rules and regulations established by the University. (See page 74.)

FELLOWSHIPS.

Fellowships of the value of $500 each, open to graduates, are offered annually in the various departments.

Applications for these fellowships are to be made annually in writing to the Secretary of the Faculty on or before the 1st day of May.

SCHOLARSHIPS.

The Boiler Inspection and Insurance Company of Canada offers a Scholarship in the Department of Mechanical Engineering of the value of $130.00 to the student who obtains highest Honour Standing in the regular examinations of the third year.

The successful candidate will be expected to proceed to his fourth year during the session next following the date of the award.

The amount of the award will be credited by the Bursar to the fees of the fourth year of the successful candidate.

Research Fellowship.

Two research Fellowships of the value of $500 each are offered annually by the Alumni Association of the Faculty of Applied Science and Engineering.

I. MATRICULATION.

1. The matriculation requirements of this Faculty are based upon those given in the curriculum for Junior Matriculation, a copy of which may be obtained on application.

2. A candidate for matriculation must produce satisfactory certificates of good character.

3. The subjects are as follows:

English, History, any three of the following, viz., Greek, Latin, French, German, Experimental Science, with pass standing in Honour Mathematics.

In selecting the options it is recommended that students take French, German and Experimental Science. In the department of Architecture French is required, in Applied Chemistry and Chemical Engineering German is required, and in Mechanical Engineering it is desirable that students take German.

4. The pass standard is forty per cent. of the marks assigned to a paper, with an average of sixty per cent.

5. A candidate who has obtained an average of sixty per cent. on all the papers but has failed to obtain forty per cent. in not more than two papers may complete matriculation by passing on these papers at any one subsequent examination.

6. A candidate who has obtained forty per cent. on each of at least eight papers, with an average of sixty per cent. on the same, will be credited with these papers. In order to complete his Matriculation, he must obtain at one subsequent examination forty per cent. on each of the remaining papers, with an average of sixty per cent.

7. The examination for pass and honour Junior Matriculation is held annually in June at centres in Ontario, and, if application is made to the Senate, the examination may, with the co-operation of the Department of Education, be held at centres outside Ontario.

8. Applications accompanied by the fee of $5.00 must be sent not later than the 15th of May to the local Public School Inspector, or in the case of candidates intending to write at the University, to the Registrar.

9. A Junior Matriculation examination, at which no honour papers are set, will be held in September at the University and at such other centres as may from time to time be authorized. Candidates entitled to the privileges of supplemental examinations, as well as new candidates, may present themselves at this examinations.

10. Applications to write on the September examination, together with the necessary fee, must be received at the Department of Education not

later than September 1, for those who wish to write at any centre established in Ontario, and not later than August 1 for any centre elsewhere in Canada.

11. Forms of application, the time-table of the September examination, and further particulars may be had upon application to the Department of Education.

II. ADMISSION.

A candidate for admission must have completed the seventeenth year of his age on or before the first of October of the year in which he seeks to enter.

Applications for admission must be made on blank forms supplied by the Registrar, and should be forwarded early in September.

Applications will be considered from (*a*) those who have completed matriculation, including those who hold certificates recognized as equivalent—see matriculation curriculum—, (*b*) those who have failed in not more than two papers of the matriculation examination. The latter must complete matriculation before being eligible to enter the second year.

Applications based upon other certificates than those mentioned will be considered as occasion may require. Such certificates must be accompanied by an official statement of the marks in the various subjects upon which the certificate was granted.

ADMISSION AD EUNDEM STATUM.

An undergraduate of another University may be admitted *ad eumden statum* on such conditions as the Senate on the recommendation of the Council of the Faculty may prescribe.

An applicant for admission *ad eundem statum* must submit with his petition (1) a calendar of his University giving a full statement of the courses of instruction; (2) an official certificate of character and academic standing.

III. REGISTRATION.

Registration in the various years will begin Sept. 1st Blank cards for the purpose will be supplied by the Secretary on request. (See "Dues and Deposits," next page.)

IV. FEES.

All fees are payable at the Bursar's office between the hours 10 a.m. and 1 p.m. of each week day except Saturday.

The annual fees including tuition, library, laboratory supplies and one annual examination shall be as follows:

First Year.

If paid in full on or before November 5th....................	$100.00
By instalments:	
First instalment, if paid on or before November 5th...........	50.00
Second instalment, if paid on or before February 5th........	55.00

Second Year.

If paid in full on or before November 5th	$110.00
By instalments:	
First instalment, if paid on or before November 5th	55.00
Second instalment, if paid on or before February 5th	60.00

Third and Fourth Years.

If paid in full on or before November 5th	$120.00
By instalments:	
First instalment, if paid on or before November 5th	60.00
Second instalment, if paid on or before February 5th	65.00

Repeating the Year.

If paid in full on or before November 5th	$50.00

The above fees are payable in advance. After November 5th a penalty of $1.00 per month will be imposed until the whole amount is paid. In the case of payment by instalments the same rule as to penalty will apply.

Students desiring to pay in instalments must have paid the fees due in the first term before proceeding to the work of the second term.

General Fees.

Matriculation, or registration of Matriculation	$5.00
Supplemental examination	10.00
Admission *ad eundem statum*	10.00
Degree of B.A.Sc. (payable not later than April 1st)	10.00

Dues and Deposits.

(Payable to the Secretary of the Faculty at the time of registration.)

Engineering Society membership	$2.00
Annual deposit	2.00

Charges for waste, neglect and breakage are to be met out of the deposit fee, the balance of which will be refunded to the student at the end of the session.

Students' Council Fee.

The Annual Fee	$1.00

Every male student in attendance, proceeding to the Degree of Bachelor of Applied Science and Engineering, is required to pay to the Bursar, at the time of the entry of his name with the Secretary, the Annual Fee of one dollar, for the maintenance of the Council of the Undergraduates.

GENERAL INFORMATION FOR STUDENTS.

The Council of University College and the governing bodies of the federated universities and colleges, respectively, have disciplinary jurisdiction over and entire responsibility for the conduct of their students in respect of all matters arising or occurring in or upon their respective college buildings and grounds, including residences.

The councils of such of the faculties as have assigned for their separate use any building or buildings and grounds, including residences, have disciplinary jurisdiction over and entire responsibility for the conduct of all students in their respective faculties in respect of all matters arising or occurring in or upon such building, or buildings and grounds.

In all such cases, and, save as aforesaid, as respects all students to whatsoever college or faculty they may belong, disciplinary jurisdiction is vested in the Caput, but the Caput may delegate its authority in any particular case or by any general regulation to the council or other governing body of the university or college or faculty to which the student belongs.

The Caput has also power and authority to determine by general regulations, or otherwise, to what college, faculty or other body the control of university associations belongs.

If there be any questions as to the proper body to exercise jurisdiction in any matter of discipline which may arise, the same shall be determined by the Caput, whose decision shall be final.

Disciplinary jurisdiction includes the power to impose fines.

REGULATIONS RESPECTING STUDENTS.

No student will be enrolled in any year, or be allowed to continue in attendance, whose presence for any cause is deemed by the Council to be prejudicial to the interests of the University.

All interference on the part of any student with the personal liberty of another, by arresting him, or summoning him to appear before any tribunal of students, or otherwise subjecting him to any indignity or personal violence, is forbidden by the Council. In particular, students of all Faculties are warned against the practices known as the "hustling" of freshmen and against inter-year or inter-faculty "hustles". Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

Any student who may be convicted of having taken part in processions through the city, which have not been authorized by the police authorities after application by the Executive of the Students' Council, will be severely disciplined.

All students shall be in attendance during the whole of each term. Those whose attendance or work is reported as unsatisfactory are liable to dismissal by the Council.

No student will be allowed to repeat the work of any year more than once.

Information as to the text-books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

OPTIONS.

In departments 1, 2, 3 and 7 of the first and second years, students have the option of taking either French or German. The selection made for the first year must be continued during the second year.

In Department 1 of the third year, in addition to the regular subjects, Biology will be required of those who intend to follow Sanitary work in the fourth year.

In department 5, second, year, an option is permitted between Biology and Calculus as the student, upon consultation with the head of the department in Chemistry, may decide.

In the fourth year, optional courses are arranged in certain departments. Students are required to submit their selection to the Secretary in writing, not later than September 15th. The proposed selection must be approved by Council before adoption.

REGULATIONS RESPECTING EXAMINATIONS.

Regular Examinations.

A student who in either term of the session fails to perform the work of his course in a manner satisfactory to the professors in charge, will not be allowed to present himself at the final examinations of the year.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the annual examinations in April, notice in writing of their intention to take such examinations. A penalty of $1.00 will be imposed upon all candidates who fail to give notice within the proper time.

In the second, third and fourth years annual examinations will be held at the beginning of the second term on all subjects completed during the first term.

No student will be allowed to write at the annual examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examination will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and one-half times the minimum required in the case of a written examination.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, electrical design, optics, surveying and architecture, the drawings set in these subjects must be made.

Candidates who fail in passing the annual examinations will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

Term Examinations.

In the first year only, term examinations in three subjects will be held on the last two days of the first term.

The subjects will not be announced until the day previous to the first examination.

The results of these examinations will be incorporated with those of the annual examinations in the same subjects in the ratio of 1 to 2.

Supplemental Examinations.

A candidate who fails in one or two subjects at the Annual Examinations will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 18th of September, 1914. Candidates are required to send to the Secretary of the Faculty not later than the first of September, notice in writing of their intention to take such examinations, and to remit to the Bursar the fee of $10.00

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

Vacation Work.

Vacation work must be handed in on or before the first day of the session.

Vacation notes must be on construction only, except in Department 2 (see p. 74), and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be freehand pencil drawings with figured dimensions.

Notes must be made in standard note books approved of by the Faculty, Notes which have been taken during the session in connection with the work in drawing will not count as vacation work.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

Shop Work.

Students in Mechanical and Electrical Engineering are not considered as having completed their course of study, nor are degrees granted until certificates have been submitted to the Council, and accepted as satisfactory, showing not less than eight months of mechanical experience in production of some kind under commercial conditions. Preferably the work undertaken should be in one of the manufacturing industries or trades with which the Course is related.

It is not desirable that any student in these Courses should enter sales or other non-production departments of the engineering industries without having acquired some personal experience in mechanical production. It is best to obtain this experience under commercial conditions. Otherwise one can not at all appreciate shop conditions and limitations.

Honours.

Honours will be granted in each department to the students who pass in all the subjects and obtain at least 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Papers read before the Engineering Society may be considered in granting Honours.

REGULATIONS RESPECTING TERM WORK.

Students working in any laboratory must be governed by the regulations relating thereto as made known from time to time.

No laboratory reports or drawings may be removed from the laboratories without permission. The Council reserves the right to dispose of them as may be thought proper.

Field Work.

No field notes will be counted which have not been taken in the field and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

Drafting Rooms.

Drawings prescribed for the first term of the session will not be counted unless finished in that term.

The minimum number of drawings in first and second years shall be twenty-five, and the maximum number thirty-five, except in the Department of Analytical and Applied Chemistry, in which the number shall be fifteen and twenty-five respectively.

No drawings will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

Theses.

In the Fourth Year each student is required to prepare a thesis on a subject approved by the Council. The title of the thesis must be sent to the Secretary of the Faculty for approval on or before November 1st, and the completed thesis must be handed in not later than the first day of the second term and shall become the property of the University. The rules governing size, form, etc., may be obtained on application to the Secretary.

EXEMPTIONS.

Applications for exemption from any of the regulations must be made to the Council in writing and the particulars of the case fully stated.

DEPARTMENT OF CIVIL ENGINEERING.

The courses of study in Civil Engineering are designed to give the student a sound training in the fundamental scientific principles on which the practice of the profession is based. The instruction is given by means of lectures and practical work in the field, the drafting room and the laboratory. In this way the student is led to apply the principles developed in the class room.

SUBJECTS OF INSTRUCTION.

Civil Engineering—First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Surveying	205, 206	1	9	1	
Statics	10	2		2	
Dynamics	11	2		2	
Elementary Chemistry	75	2		2	
Modern Language	217, 218	1		1	
Accounts	65	1		1	
Drawing	117		13		22
Second Year.					
Vacation Work	220				
Calculus	190	2		2	
Spherical Trigonometry	191	1			
Elementary Astronomy	55	1		1	
Descriptive Geometry	121	1		1	
Surveying	207, 208	1	9	1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Mineralogy	159, 161	2	1		2
Banking and Finance	66	1		1	
Modern Language	217, 218	1		1	
Drawing	123		12		16
Chemical Laboratory	81				6

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y
Vacation Work	220				
Least Squares	192			1	
Practical Astronomy and Geodesy	56, 57	2		2	
Surveying and Levelling	209, 210	1	9	1	
Descriptive Geometry	127	1			
Hydraulics	29, 30	2		2	3
Photography	199	1	1½		1½
Ferro-Metallurgy	181	1		1	
Theory of Structures	18	2		2	
Cements and Concrete	21			1	
Engineering Chemistry	94	1		1	
Geology	150	1		1	
Limited Companies	67	1		1	
Heat	198	1	1½		
*Biology	61	2		2	
Strength of Materials	14				1
Drawing	128		8		19

Fourth Year.

†Foundations	20	1	1	1	1
Electricity	140	1		1	
†Thermodynamics	34, 39*a*	1	1	1	1
Geology	151	1		1	
Contracts and Specifications	68			1	
Thesis	219				
And one of					
(*a*) Astronomy	58, 59	2	23	2	
Geodesy	60	2		2	23
(*b*) Sanitary Engineering	213	1½	16	1½	16
Highway Engineering	214	1½	6	1½	6
(*c*) Structural Engineering	215	6	22	7	22
or two of					
(*d*) Hydraulics	31, 32	3	10	3	10
(*e*) Strength and Elasticity of Materials	16, 17, 22, 23	3½	11	3½	11
(*f*) Railway Engineering	211, 212	1½	11	1½	11

* Required only of those who propose to take Sanitary Engineering in the Fourth Year.

† Not required of those taking the Astronomy option.

2. DEPARTMENT OF MINING ENGINEERING.

The course in Mining Engineering is intended to serve as a preliminary training for those who expect to practise the art of mining or metallurgy. In the first two years it differs very little from the course in civil engineering, in the third year some subjects peculiar to mining and metallurgy are taken up.

In general this course is designed to first give the student a good training in the parts of engineering essential to all branches, such as surveying, drafting, etc., and then in the upper years to allow him to follow studies peculiar to mining engineering.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least six months' practical experience in work connected with mining, metallurgy or geology, for which they must have received regular wages. Certificate forms, giving full details as to acceptable classes of work, will be furnished on application, and should be obtained by all students before entering employment.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Surveying	205, 206	1	9	1	
Statics	10	2		2	
Dynamics	11	2		2	
Elementary Chemistry	75	2		2	
Modern Languages	217, 218	1		1	
Accounts	65	1		1	
Drawing	117		13		19
Chemical Laboratory	76				3

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Surveying	207, 208	1	9	1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Optics	197	1	2		
Hydrostatics	196			1	1
Inorganic Chemistry	79	1			
Organic Chemistry	87	1			
Engineering Chemistry	85			1	
Mineralogy	157, 160	2	1		3
Geology	150	1		1	
Mining	170, 171			1	3
Metallurgy	183	1			
Modern Languages	217, 218	1		1	
Banking and Finance	66	1		1	
Drawing	123		7		7
Chemical Laboratory	81, 82		3		9

Mining Engineering—Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Surveying and Levelling	209, 210	1	9		
Theory of Structures	19	2			
Hydraulics	29*a*	2		2	
Electricity	140	1		1	
Engineering Chemistry	94	1		1	
Analytical Chemistry	80	1		1	
Assaying	173		3	1	3
Petrography	163	1		1	
Mineralogy	164		2		2
Economic Geology	151, 156	2		2	2
Ore Deposits	155	1		1	
Mining	172	1	3	1	
Ore Dressing	177	1		1	
Ferro-Metallurgy	181	1		1	
Metallurgy	184	1		1	
Limited Companies	67	1		1	
Drawing	132		3		5
Chemical Laboratory	93				9½

Fourth Year.

Thermodynamics	34	1		1	
Electrochemistry		2			
Assaying	174			1	3
Petrography	165, 166	1	2	1	2
Geology, Archaean and Glacial	152	2	1	2	
Geology, Mining	153	1		1	
Mining	175	1		1	
Ore Dressing	179	1		1	
Metallurgy	180, 182	1		1	6
Cost-keeping, etc.	69	1		1	
Milling	176				6
Power	32*a*, 39*a*, 141		3		3
Design	215		3		3
Chemical Laboratory	112		12		
Thesis	219		7		2

3. DEPARTMENT OF MECHANICAL ENGINEERING.

The course in this Department is designed to meet the needs of those students who are intending to take up the work connected with Mechanical Engineering, such as the design of gas engines, steam engines, steam boilers, steam turbines, air compressors, etc.; the design and installation of the machinery connected with power plants and central stations, steam piping and other similar problems. The work is also so arranged that the student becomes somewhat familiar with the design of travelling cranes and mill buildings and similar problems connected with structural steel work.

Since the work of the mechanical engineer and of the electrical engineer is closely allied, the courses in these two departments in the first two years are identical and cover the subjects mentioned below.

In the third year the work becomes more specialized, the mechanical engineers paying more attention to heat engines of various types, and to mill building design and other work of similar nature. The study of electricity is continued and the student gets considerable practice in the mechanical and electrical laboratories.

In the fourth year the student devotes himself still more closely to his chosen work, placing the greater stress on thermodynamics and the theory and testing of heat engines, and problems in machine design. Much time is spent in the mechanical laboratories testing gas and steam engines and other machines.

Candidates for the degree in this department are required to present satisfactory evidence of having had at least eight months' practical experience in one of the principal trades connected with Mechanical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering, as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSTRUCTION.

Mechanical Engineering—First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Magnetism and Electricity	135	2			
Electric Circuits	136			2	
Elementary Chemistry	75	2		2	
Drawing	120		20		20
Electricity	137		1½		1½
Modern Language	217, 218	1		1	
Accounts	65	1		1	

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Dynamics	12	1		1	
Theory of Mechanism	25	2		2	
Steam Engines	38	1			
Strength of Materials	13	2		2	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Electricity	138, 139	2	2½	2	2½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Banking and Finance	66	1		1	
Modern Language	217, 218	1		1	
Drawing	123		12		19
Chemical Laboratory	81		6		

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Mechanics of Machinery	26	1		1	
Machine Design	27	1	7½	1	7½
Thermodynamics	33, 35	2	2	2	3
Heat Engines	39	1		1	
Hydraulics	29, 30	2	1	2	
Theory of Structures	19	2			
Ferro-Metallurgy	181	1		1	
Magnetism and Electricity	142	3	4½	1	4½
Alternating Current	143	1		1	
Engineering Chemistry	94	1		1	
Limited Companies	67	1		1	
Strength of Materials	15		2		
Drawing	132		3		3

Fourth Year.

Mill Building Design	24	1	3	1	3
Cost-keeping, etc.	69	1		1	
Machine Design	28	1	4	1	4
Thesis	219				
And two of					
(*d*) Hydraulics	31, 32	3	9	3	9
(*e*) Strength of Materials	16, 17, 22, 23	3½	10	3½	10
(*g*) Thermodynamics	36, 37	3	10	3	10

4. DEPARTMENT OF ARCHITECTURE

The instruction in this department is arranged to lay a broad foundation for the subsequent professional life of its graduates, and incidentally to prepare its students to be immediately useful in an architect's office. The curriculum has been arranged to meet the aesthetic and scientific needs of the profession, and includes History and Principles of Architecture, Freehand Drawing in pencil, ink and color, Modelling, Architectural Design, Analysis and Criticism of Buildings, Mathematics, Statics, Strength and Elasticity of Materials, Theory of Construction and Heating and Ventilation.

The equipment of the department includes a working library of 1,000 volumes, a large file of periodicals, 2,500 photographs, 2,000 stereographic photos, 4,500 lantern slides, and a large collection of models and casts.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	1		1	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Building Measurement	52	1	9	1	
Statics	10	2		2	
Elementary Chemistry	75	2		2	
History and Principles of Architecture	40	1		1	
French	217	1		1	
Accounts	65	1		1	
Drawing	118		12		21
Freehand Drawing	49		2		2
Modelling	50		2		2

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Strength of Materials	13	2		2	
Engineering Chemistry	94	1		1	

Second Year—Continued.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Optics	197	1	1½		
Hydrostatics	196			1	1½
Architectural Design	46	1		1	
History of Architecture	41	1		1	
Orders of Architecture	45	1		1	
History of Ornament	43	1		1	
French	217	1		1	
Banking and Finance	66	1		1	
Drawing					
Architectural Design	125		20		20
Freehand Drawing	49*a*		2		2
Modelling	50*a*		2		2
Third Year.					
Vacation Work	220				
Descriptive Geometry	131	1		1	
Acoustics	195	1	3	1	
History of Architecture	42	1		1	
History and Principles of Ornament	44	1		1	
Architectural Design	47	1		1	
Building Materials	53	2		2	
Theory of Structures	19	2			
Cements and Concrete	21			1	
Limited Companies	67	1		1	
Strength of Materials	15		1		1
Photography	199	1	1½		1½
Modelling	50*b*		2		2
Water Color Painting	49*b*		2		2
Drawing Architectural Design	130		16		22
Fourth Year.					
Strength of Materials	17		6		6
Electricity	146	1		1	
Heating and Ventilation	53	1		1	
Sanitary Science	52	1		1	
Contracts and Specifications	68			1	
Thesis	219		3		3
Drawing from life	49*c*		2		2
Modelling from life	50*c*		2		2
And one of					
(*l*) Architectural Design	48	2	20	2	20
(*m*) Architectural Engineering	216	4	22	3	26

5. DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY.

The course in Analytical and Applied Chemistry is designed to furnish instruction suitable for those students who intend to practise chemistry as a profession, either as analysts or as works chemists.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		1	
Electricity and Magnetism	135	1		1	
Biology	61, 62	2	3	2	3
Accounts	65	1		1	
Electric Circuits	136	1		1	
Elementary Chemistry	75	2		2	
Elementary Mineralogy	157	2			
Inorganic Chemistry	77	1		1	
German	218	1		1	
Drawing	119		4		4
Electricity	137		1		
Chemical Laboratory	78		10		14
Mineralogy	158		4		3
Second Year.					
Electricity	138, 139	2	2½		2½
Engineering Chemistry	85			1	
Industrial Chemistry	86	1		1	
Organic Chemistry	88	2		2	
Physical Chemistry	90	2		2	
Inorganic Chemistry	79	1			
Analytical Chemistry	80	1		1	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Geology	150	1		1	
*Biology or	63	1	3	1	3
Calculus	190	2		2	
German	218	1		1	
Banking and Finance	66	1		1	
Chemical Laboratory	89		15		16
Metallurgy	183			1	
Mineralogy	162				1

* Students should consult the head of the Department of Chemistry as to the option to be selected.

Third Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Electrochemistry	101, 102	2	3		
Engineering Chemistry	94	1		1	
Industrial Chemistry	95	1		1	
Organic Chemistry A	97	2		2	
Organic Chemistry B	98			1	
Chemical Plant	96	1		1	
Ferro-Metallurgy	181	1		1	
Metallurgy	184	1		1	
Economic Geology	151	2		2	
Crystallography	167	1		1	
Limited Companies	67	1		1	
German	218	1		1	
Chemical Laboratory	91		16		20
Assaying	173		1½		1½
Heat	198	1	1½		
Electricity	140			1	
Fourth Year.					
Inorganic Chemistry	103	1		1	
Organic Chemistry	104	1		1	
Cost-keeping, etc. . .	69	1		1	
German	218	1		1	
Thesis	219				
And one of					
(*h*) Electrochemistry	108, 109	2	28	2	28
(*i*) Industrial Chemistry	106, 107	1	29	1	29
(*j*) Sanitary and Forensic Chemistry and Bacteriology	64, 110, 112	1	29	2	29
(*k*) Metallurgy	180	2	28		28

6. DEPARTMENT OF CHEMICAL ENGINEERING.

In many industries there is a demand for a man who combines the technical knowledge of the mechanical engineer with a knowledge of chemistry. It is to fill this want that the course in Chemical Engineering is designed.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Electric Circuits	136			2	
Elementary Chemistry	75	2		2	
Inorganic Chemistry	77	1		1	
German	218	1		1	
Accounts	65	1		1	
Drawing	120		17		19
Electricity	137		1½		1½
Chemical Laboratory	76				3

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Strength of Materials	13	2		2	
Electricity	138, 139	2	2½	2	2½
Engineering Chemistry	85			1	
Industrial Chemistry	86	1		1	
Organic Chemistry	88	2		2	
Physical Chemistry	90	2		2	
Inorganic Chemistry	79	1			
Optics	197	1	1½		
Hydrostatics	196			1	1½
German	218	1		1	
Banking and Finance	66	1		1	
Drawing	123		13		14
Chemical Laboratory	84		6		6
Metallurgy	183			1	

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Theory of Structures	19	2			
Thermodynamics	33, 35	2		2	3
Electrochemistry	101, 102	2	3		
Engineering Chemistry	94	1		1	
Organic Chemistry A	97	2		2	
Organic Chemistry B	98			1	
Industrial Chemistry	95	1		1	
Analytical Chemistry	80	1		1	
Metallurgy	184	1		1	
Ferro-Metallurgy	181	1		1	
Chemical Plant	96	1		1	
Limited Companies	67	1		1	
German	218	1		1	
Machine Design	27	1	4½	1	4½
Assaying	173		1½		1½
Electricity	140			1	
Drawing	132		3		
Chemical Laboratory	92		8		13

Fourth Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Hydraulics	29*a*	2		2	
Inorganic Chemistry	103	1		1	
Organic Chemistry	104	1		1	
Cost-keeping, etc	67	1		1	
Power	32*a*, 39*a*, 141		3		3
German	218	1		1	
Thesis	219				
And one of					
(*h*) Electrochemistry	108	2		2	
(*i*) Industrial Chemistry	106, 107	1		1	
(*j*) Sanitary and Forensic Chemistry and Bacteriology	64, 110, 112	1		2	
(*k*) Metallurgy	180	2	25		23

7. DEPARTMENT OF ELECTRICAL ENGINEERING.

The course in Electrical Engineering is arranged to provide preliminary training for those who would follow any of the various lines of activity connected with electrical industry.

The first two years of the course are devoted to fundamental scientific principles, and incidentally more or less of their application to engineering problems in mechanical, civil and electrical work. Many problems are solved in the drafting rooms by graphical methods. The third year includes further theoretical work, more particular attention being given to electrical and mechanical studies in theory, operation and design. The fourth year is devoted to advanced work in alternating current theory and practice combined with similar study in thermodynamics, hydraulics or electrochemistry.

A large amount of laboratory practice is provided, most of which belongs to the third and fourth years. In this last year most of the time is spent in laboratory investigations and studies resulting therefrom.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' mechanical experience in one of the principal trades connected with Electrical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Magnetism and Electricity	135	2			
Electric Circuits	136			2	
Elementary Chemistry	75	2		2	
Modern Language	217, 218	1		1	
Accounts	65	1		1	
Drawing	120		20		20
Electricity	137		1½		1½

Second Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Theory of Mechanism	25	2		2	
Steam Engines	38	1			
Electricity	138, 139	2	2½	2	2½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Modern Language	217, 218	1		1	
Banking and Finance	66	1		1	
Drawing	124		12		19
Chemical Laboratory	81		6		

Third Year.

Vacation Work	220				
Mechanics of Machinery	26	1		1	
Machine Design	27	1	3¼	1	3¼
Hydraulics	29, 30	2	1	2	
Thermodynamics	33, 35	2	2	2	1½
Heat Engines	39	1		1	
Electrochemistry	101, 102	2	3		
Magnetism and Electricity	142	2		2	
Alternating Current	143	1		1	
Electrical Design	145	1	1½	1	3
Electrical Laboratory	144		6		6
Engineering Chemistry	94	1		1	
Ferro-Metallurgy	181	1		1	
Limited Companies	67	1		1	

Fourth Year.

Applied Electricity	146, 147	3	18	3	18
Cost-keeping, etc	69	1		1	
Thesis	219				
And one of					
(*d*) Hydraulics	31, 32	3	10	3	10
(*g*) Thermodynamics	36, 37	3	10	3	10
(*h*) Electrochemistry	108, 109	3	10	3	10

8. DEPARTMENT OF METALLURGICAL ENGINEERING.

The object of this course is to provide instruction and preliminary training for those who intend to become metallurgical engineers. Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' experience in metallurgical work.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Inorganic Chemistry	75, 77	3		3	
Chemical Laboratory	78		9		9
Accounts	65	1		1	
Mineralogy	157, 168	2	1		1
Drawing	120		10		10

Second Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Hydrostatics	196			1	2
Electricity	140			1	
Steam Engines	38	1			
Magnetism and Electricity	135	2	3		
Inorganic Chemistry	79, 80, 85			2	
Banking and Finance	66	1		1	
Chemical Laboratory	83		6		6
Mineralogy	169		1		1
Mining	170, 171	1		1	2
Metallurgy	183, 185	1		2	2
Heat	198	1	2		
Spanish		1		1	
Drawing			7		7

Second Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Theory of Mechanism	25	2		2	
Steam Engines	38	1			
Electricity	138, 139	2	2½	2	2½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Modern Language	217, 218	1		1	
Banking and Finance	66	1		1	
Drawing	124		12		19
Chemical Laboratory	81		6		
Third Year.					
Vacation Work	220				
Mechanics of Machinery	26	1		1	
Machine Design	27	1	3¼	1	3¼
Hydraulics	29, 30	2	1	2	
Thermodynamics	33, 35	2	2	2	1½
Heat Engines	39	1		1	
Electrochemistry	101, 102	2	3		
Magnetism and Electricity	142	2		2	
Alternating Current	143	1		1	
Electrical Design	145	1	1½	1	3
Electrical Laboratory	144		6		6
Engineering Chemistry	94	1		1	
Ferro-Metallurgy	181	1		1	
Limited Companies	67	1		1	
Fourth Year.					
Applied Electricity	146, 147	3	18	3	18
Cost-keeping, etc	69	1		1	
Thesis	219				
And one of					
(*d*) Hydraulics	31, 32	3	10	3	10
(*g*) Thermodynamics	36, 37	3	10	3	10
(*h*) Electrochemistry	108, 109	3	10	3	10

8. DEPARTMENT OF METALLURGICAL ENGINEERING.

The object of this course is to provide instruction and preliminary training for those who intend to become metallurgical engineers. Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' experience in metallurgical work.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		1	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Inorganic Chemistry	75, 77	3		3	
Chemical Laboratory	78		9		9
Accounts	65	1		1	
Mineralogy	157, 168	2	1		1
Drawing	120		10		10

Second Year.

Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Hydrostatics	196			1	2
Electricity	140			1	
Steam Engines	38	1			
Magnetism and Electricity	135	2	3		
Inorganic Chemistry	79, 80, 85			2	
Banking and Finance	66	1		1	
Chemical Laboratory	83		6		6
Mineralogy	169		1		1
Mining	170, 171	1		1	2
Metallurgy	183, 185	1		2	2
Heat	198	1	2		
Spanish		1		1	
Drawing			7		7

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Theory of Mechanism	25	2		2	
Hydraulics	29*a*	2		2	
Theory of Structures	19	2			
Limited Companies	67	1		1	
Physical Chemistry	90, 93	2	5	2	5
Electrochemistry	101, 102	2	3		
Ferro-Metallurgy	181	1		1	
Cement and Concrete	21	1		1	
Assaying		1	3	1	5
Metallurgy	186	1	1	4	7
Ore Dressing	172, 177	1		1	3
Drawing			3		

Fourth Year.

Thermodynamics	34	1		1	
Heat Engines	39	1		1	
Ore Dressing		2	2	2	4
Assaying			4		
Costs		1		1	
Plant Design		1	4	1	4
Power	*32a*, *39a*, 141		3		3
Metallurgy	186*a*	2	9	2	9
Thesis			4		4

OUTLINE OF COURSES OF INSTRUCTION.

APPLIED MECHANICS.

10. Statics:—*T. R. Loudon.*

Departments 1, 2, 3, 4, 6, 7 and 8, I Year; 2 hours per week; both terms.

This course of lectures deals with forces in a single plane, and concerns chiefly the calculation of tension, compression and shearing stresses in frame structures and solid beams. It also deals with the consideration of problems relating to friction.

11. Dynamics:—*J. McGowan.*

Departments 1, 2, 3, 6, 7 and 8, I Year; 2 hours per week; both terms.

This course of lectures deals with bodies having motion of translation in one plane; also with relative motion, momentum, work and energy.

Text book:—Tutorial Dynamics—Briggs and Bryan.

12. Dynamics of Rotation:—*W. J. Loudon.*

Departments 1, 2, 3, 6, 7 and 8, II Year; 1 hour per week; both terms.

This course covers angular motion, including moments of inertia, simple harmonic motion, the pendulum, centres of mass, suspension and percussion, the simple theory of the fly-wheel and the governor.

Text book:—Dynamics of Rotation—Worthington.

13. Strength of Materials:—*P. Gillespie.*

Departments 1, 2, 3, 4, 6, 7 and 8, II Year; 2 hours per week; both terms.

In this course the strength and elasticity of materials are mathematically treated. The stresses in such elements of structures as the tie rod, the beam, the strut and the member subjected to shear are investigated and the elementary principles of design established. In the lecture and drafting rooms through numerous problems involving the design of simple beams, columns, riveted connections, etc., these principles are exemplified. The work includes also the discussion of eccentric loading, suddenly applied loads and repeated stresses.

Reference Book:—Mechanics of Materials—Merriman.

14. STRENGTH AND ELASTICITY OF MATERIALS:—*J. McGowan.*

Departments 1, 3 and 4, III Year; 1 hour per week; one term.

This course is intended to give the student an introduction to the experimental study of the strength and elasticity of materials. It is intended that he shall acquire some familiarity with the construction and operation of testing machines and with the properties of the ordinary building materials.

Reference Book:—Laboratory Instructions, Department of Applied Mechanics, U. of T., 1913.

16. THEORY OF STRUCTURES:—*J. McGowan.*

Departments 1 and 3, IV Year; 2 hours per week; both terms.

The work taken up in this course of lectures consists in swing bridges, arches, suspension bridges and some special features in column construction. Some examples of the above structures will be designed in the class and carried out in further detail in the drafting room.

Reference Book:—Modern Framed Structures—Johnson.

17. STRENGTH AND ELASTICITY OF MATERIALS:—*P. Gillespie.*

Departments 1, 3 and 4, IV Year; a laboratory course of about 11 hours per week.

This course of experiments is intended to give the student practice in investigating the elastic and physical properties of iron, steel, concrete, timber and other building materials.

Reference book:—Materials of Construction—Johnson.

18. THEORY OF STRUCTURES:—*C. R. Young.*

Department 1, III Year; 2 hours per week; both terms.

The work of the first term comprises a thorough discussion of restrained, continuous and trussed beams, multiple beam and box girders, plate girders and certain practical aspects of column design. A number of designs of girders and structural details are worked out in the class and drafting rooms.

The second term is given chiefly to the design of a riveted truss highway span and a riveted truss railway span, the complete designs being made in the lecture and drafting rooms.

19. THEORY OF STRUCTURES:—*C. R. Young.*

Departments 2, 3, 4, 6 and 8, III Year; 2 hours per week; first term.

The work is practically the same as that for Department 1 in the first term except that a building plate girder is designed instead of a plate girder bridge span.

Text books:—Modern Framed Structures—Johnson, Bryan and Turneaure; Theory of Structures—Spofford; Bridge and Structural Design—Thomson; Aids in Structural Design—Young; Carnegie Pocket Companion; Cambria Steel.

20. FOUNDATIONS, RETAINING WALLS AND DAMS:—*P. Gillespie.*

Department 1, IV Year; 1 hour per week; both terms.

This course of lectures is devoted to the design of the structures mentioned. Preparatory to the discussion of the practical aspects of the subjects, and in order to gain familiarity with the fundamental principles involved, a part of the first term is given over to the consideration of the theory of compound stress. The most approved forms of construction of retaining walls, footings, abutments, piers and dams are then described, and typical designs are worked out in the class and drafting rooms.

Text books and books of reference:—Retaining Walls for Earth—M. A. Howe; Walls, Bins and Grain Elevators—M. S. Ketchum; A Treatise on Masonry Construction—I. O. Baker; Design and Construction of Dams—E. Wegmann.

21. CEMENTS AND CONCRETE:—*P. Gillespie.*

Departments 1, 4 and 8, III Year; 1 hour per week; second term.

The manufacture, testing and use of Portland Cement and the elementary theory of reinforced concrete are discussed in this course of lectures.

22. REINFORCED CONCRETE:—*P. Gillespie.*

Departments 1 and 4, IV Year; 1 hour per week.

The theory of the strength of reinforced concrete elements including the beam, the slab, the T-beam and the column, is continued in this course.

The analysis of the monolithic arch by the elastic theory is discussed, and the student is required in the drafting room to apply his knowledge to the design of simple structures.

Reference books:—Principles of Reinforced Concrete Construction—Turneaure and Maurer; Concrete, Plain and Reinforced—Taylor and Thompson.

23. IRON AND STEEL:—*J. Galbraith, T. R. Loudon.*

Taken by students in IV Year, who select the options (*c*) Structural Engineering, and (*e*) Strength and Elasticity of Materials.

Metallography—Mechanical Treatment, Heat Treatment; Metallurgy; Physical Properties; 1 lecture per week. Laboratory, second term.

24. MILL BUILDING DESIGN:—*C. R. Young.*

Departments 1 (*Structural Engineering Option*), 3 and 4 (*Architectural Engineering Option*), IV Year; 1 hour per week; both terms.

The structural problems involved in the design of mill buildings of timber, steel and reinforced concrete are discussed in this course of lectures. Consideration is given to the various types of buildings, the conditions governing their choice and the details of construction in different materials. Designs of portions of mill buildings are worked out in the class and drafting rooms.

Text books:—Mill Buildings—Tyrrell; Steel Mill Buildings—Ketchum

24*a*. MISCELLANEOUS STRUCTURES:—*C. R. Young.*

Department 1 (*Structural Engineering Option* and *Sanitary nnd Highway Engineering Option*), IV Year; 1 hour per week, second term.

In this course of lectures the application of theoretical principles to the design of a variety of structures is made. Among those structures discussed are transmission line towers, elevated tanks and their supporting towers, standpipes, large pressure pipes, sewers, culverts, small highway bridges, sub-surface tanks and tall chimneys. Whenever possible the lecture work is followed up by designs in the drafting rooms.

MACHINERY.

25. THEORY OF MECHANISM:—*M. B. Jackson.*

Departments 3, 7 and 8, II Year; 2 hours per week; both terms.

This course of lectures treats of the motions of machines, the latter being assumed to be of sufficient strength to resist acting forces. The formation of machines is dealt with in a general way and investigations of the velocities of points and links are made. The design of gear teeth and the application of trains of gears are taken up, also problems in static equilibrium.

Problems are worked out in the drafting room in which the methods given are employed.

Text book:—Theory of Machines—Angus.

26. MECHANICS OF MACHINERY:—*M. B. Jackson.*

Departments 3 and 7, III Year; 1 hour per week; both terms.

In this course the questions dealt with are the construction of acceleration diagrams, the determination of the accelerations of various parts of machines, the kinetic energy of machines, the effect of the weights and accelerations of parts on the velocity of the fly-wheel and the proper weight of the latter to fulfil given conditions. The theory of various forms of governors is also fully taken up and the efficiency of machines. The discussion of the design of slide valves and gears is continued in this course.

Text books:—Slide Valve Gears—Halsey; Theory of Machines—Angus.

27. MACHINE DESIGN:—*J. T. Lagergren.*

Departments 3, 6, 7, III Year; 1 hour per week; both terms.

The lectures in this course deal principally with the applications of the principles of kinematics and the theory of the strength of materials to the design of machine parts, such as shafting, gearing, journals, clutches, etc.

In addition to the lecture course time is spent in the drafting room where designs involving the above principles are worked out and the necessary calculations made. These designs are made as parts of some actual machine, such as an engine.

The laboratory work occupies 7½ hours per week for Department 3, 4½ hours for Department 6, and 3¼ hours for Department 7.

28. MACHINE DESIGN:—*J. T. Lagergren.*

Department 3, IV Year; 4 hours per week.

The lectures and practical work in this course are meant to supplement those of Course 27, and deal with more difficult problems and designs. The design of a complete machine is taken up, and detail drawings as well as an assembly drawing are made.

HYDRAULICS.

29. HYDRAULICS—GENERAL COURSE:—*J. J. Traill.*

Departments 1, 3 and 7, III Year; 2 hours per week.

This is an introductory course of lectures in hydraulics, and is devoted to the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of discharge by various methods, such as orifices and weirs, the conditions of flow obtaining in open channels, artificial and natural, and in pipes flowing partially full, together with other kindred subjects.

The object of this course is to provide the student with a good working knowledge of the fundamental principle of hydraulics, such as is useful in practical work, and is necessary to the intelligent investigation of more advanced problems, such as the design of turbines, water-wheels and power plants generally.

29*a*. HYDRAULICS:—*J. J. Traill.*

Departments 2 and 8, III Year; Department 6, IV Year.

This course deals with the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of water by various methods, the conditions of flow in open channels and in pipes partly full. This work is followed by a brief discussion on pumps and other hydraulic machines. The last-mentioned part of the course is supplemented by experimental work under the general title "Power".

30. HYDRAULIC LABORATORY:—*J. J. Traill.*

Department 1, III Year; 3 hours per week; one term. Departments 3 and 7, III Year; 3 periods of 3 hours each; first term.

The work in this course is intended to illustrate the lecture course given in Hydraulics and to give the student some working acquaintance with the formulas met with in practice. Experiments are made to determine the coefficients for an orifice and the coefficients of discharge for a weir. The results of these experiments are used in measuring the discharge in subsequent experiments on meters and for the determination of hydraulic resistances in various cases of flow in pipes.

31. HYDRAULICS:—*R. W. Angus, J. J. Traill.*

Departments 1, 3 and 7, IV Year; 3 hours per week; both terms.

Following up the third year course in this subject the theory already acquired is applied to the solution of problems connected with branched pipes, water-mains discharging at various points along their length, the effect of a dam on the water level at any point on a stream and numerous other problems.

The most important question considered and to which most of the lectures are devoted is the theory of turbines and centrifugal pumps, the effect of the design on the speed, discharge, power and efficiency being fully taken up.

Text books:—Hydraulic Motors, etc.—Bodmer; Centrifugal Pumps—Loewenstein and Crissey; Hydraulics—Merriman; Water-Power Engineering—Mead.

32. HYDRAULICS:—*R. W. Angus, J. J. Traill.*

Departments 1, 3 and 7, IV Year; about 10 hours per week.

A laboratory course devoted to experimental work on turbines of various types and centrifugal and turbine pumps and other similar devices. This experimental work is arranged to illustrate the lectures on turbine and pump design. The experiments are made on two large turbine pumps used in the laboratory supply, as well as on apparatus specially designed for instruction. Various methods of measuring water-power and the efficiency of machines are also given.

32*a*. POWER:—*J. J. Traill.*

Departments 2, 6 and 8, IV Year; 24 hours.

A laboratory course of experiments on orifices, weirs, turbines, meters, pumps, etc.

32*b*. HYDRAULICS:—*J. J. Traill.*

Department 1, IV Year.

This is a lecture and laboratory course of six hours per week, first term, dealing with the flow of water in pipes and open channels, measurement of water, and pumps and pumping.

HEAT ENGINES.

33. THERMODYNAMICS:—*R. W. Angus.*

Departments 3, 6 and 7, III Year; about 2 hours per week.

A lecture course in which the subject is treated in such a way as to make it of practical value and give a working acquaintance with the principles on which it is based. After the elementary ideas have been given and the proofs of the properties of Carnot's cycle, applications of the subject are made to the perfect gas and to saturated steam and to the various types of engines. Temperatures are taken from the air thermometer.

34. THERMODYNAMICS:—*R. W. Angus.*

Departments 1, 2 and 8, IV Year; 1 hour per week; both terms.

This course is especially designed to give the student a working knowledge of thermodynamics as applied to the perfect gas so that he will be able to understand clearly the action of air compressors, etc. After deducing general principles, the efficiency of compressed air transmission and the relative merits of different types of compressors are discussed.

35. THERMODYNAMIC AND MECHANICAL LABORATORY:—*L. M. Arkley.*

Department 3, III Year; 2 hours per week, first term; 3 hours per week, second term. Department 7, III Year; 2 hours per week, first term; 1½ hours per week, second term. Department 6; 3 hours per week, second term.

This laboratory course is designed to assist in a clearer understanding of thermodynamics, machine design and mechanics of machinery. The work in thermodynamics consists in the setting of slide valves, indicating engines measuring the brake horse-power, simple engine and boiler tests and the testing of gas and gasoline engines under various conditions. The mechanical laboratory work deals with the efficiency of belts and ropes as well as of several machines of simple construction. An examination of lubricating oils is also made by means of oil testing machines and other well-known devices. Experiments are also made on the balancing of reciprocating and rotating masses.

36. THERMODYNAMICS:—*L. M. Arkley, M. B. Jackson.*

Departments 3 and 7, IV Year; 3 hours per week; both terms.

This is a continuation of the introductory course, the subject being here treated from a general standpoint and the idea of entropy and of the absolute scale of temperatures being introduced. The course includes the treatment of saturated and superheated vapours, gases, the flow of fluids, chimney and boiler efficiency and the theory of various engines and other appliances including air compressors, refrigerating machines, injectors and the various forms of link motions and radial valve gears.

Text books:—Thermodynamics—Peabody; Steam Tables—Peabody.

37. THERMODYNAMICS:—*R. W. Angus, L. M. Arkley, M. B. Jackson.*

Departments 3 and 7, IV Year; about 10 hours per week.

The work in this year is a continuation and extension of the work covered in the third year laboratory course. Careful tests are made of engines of various types, such as simple, tandem and cross-compound steam engines; steam turbines; refrigerating machines; air engines; injectors and steam pumps, etc.; and an application is made of Hirn's Analysis and the entropy diagram to the results obtained. A complete set of experiments is made on each machine and the result plotted so as to show clearly to the student the effect of various alterations in the adjustment of the engine on the resulting efficiency.

Several modern gas and gasoline engines and a gas producer give ample opportunity for the study of this type of engine, and facilities are provided for sampling the gas supply and exhaust.

Two experimental stacks and three boilers enable results to be obtained on boiler efficiency and chimney draft.

38. STEAM ENGINES:—*L. M. Arkley.*

Departments 3, 7 and 8, II Year; one hour per week; one term.

This course of lectures includes a discussion of the principles of action of the steam engine; also the theory and design of various simple forms of valve gears used in the operation of such engines.

39. HEAT ENGINES:—*L. M. Arkley.*

Departments 3 and 7, III Year; Department 8, IV Year; one hour per week, both terms.

This course in heat engines is intended for students in Mechanical, Electrical and Metallurgical Engineering, to be supplementary to the general course of lectures in thermodynamics.

The principal commercial forms of heat engines are dealt with in a more or less descriptive manner; special attention is given to considerations affecting the design of the ordinary forms of steam engines, gas engines and oil engines.

39*a*. POWER:—*L. M. Arkley.*
Departments 1, 2, 6 and 8, IV Year; 21 hours.
A course of experiments with steam and gas engines, compressed air, etc.

ARCHITECTURE.

40. HISTORY OF ARCHITECTURE:—*A. Wellesley McConnell.*
Department 4, I Year; one hour per week; both terms.
In this course the development of architecture is treated very briefly and in an elementary manner, from the Pyramids of Egypt to the present, laying special emphasis on the Egyptian, Grecian and Western Asiatic work. The antique Greek and Roman orders are studied, and the students are required to make rendered drawings in the studio of certain orders and elements. An attempt is made to develop the student's sense of proportion, and in the latter part of the second term he is required to study a simple problem in design.

41. HISTORY OF ARCHITECTURE:—*A. Wellesley McConnell.*
Department 4, II Year; one hour per week; both terms.
The Classical, Early Christian, Byzantine and Romanesque styles of architecture are studied with the aid of the lantern. The student is required to become acquainted with the best examples in these styles in order that his sense of proportion and his taste may be developed and his knowledge of the different elements extended.

42. HISTORY OF ARCHITECTURE:—*A. Wellesley McConnell.*
Department 4, III Year; one hour per week; both terms.
In this course the work of the previous year is continued, with the study of Gothic and the Renaissance.

43. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*
Department 4, II Year; one hour per week; both terms.
In this course the development of Ornament is traced from the beginning through Egyptian, Assyrian, Grecian, Roman, Byzantine, Romanesque and Moresque styles. An attempt is made to analyze ornament of the best periods and to systematize the principles followed in form and color. The development and types of mouldings are also studied.

44. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*
Department 4, III Year; one hour per week; both terms.
A continuation of the course in Ornament given to the Second Year. Instruction is given in lectures with the aid of the stereopticon. The students are required to become familiar with the characteristics and forms of the ornament used in the Gothic and Renaissance styles.

45. ORDERS OF ARCHITECTURE:—*A. Wellesley McConnell.*
Department 4, II Year; one hour per week; both terms.
Lectures on the Five Orders of Architecture, their affiliated forms and the other elements used in design. Simple problems in elementary design involving the use of the orders and other elements are set from time to time.

46. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, II Year; one hour per week; both terms.
This course is given by means of individual instruction in the classroom by criticisms of the solutions of different problems set during the year and by a series of lectures. It is in this course that the student begins the serious study of design; continued practice in architectural drawing and rendering affords the training necessary to make the student a proficient draughtsman.

47. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, III Year.
Theory and practice of Design.
This course is given by individual instruction in the studio and by lectures. The greater part of the course is devoted to problems in design, and forms a continuation of the course given in the preceding year.

48. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, IV Year.
The entire course is devoted to advanced academic training in designing the more monumental classes of buildings. The student is required to design and submit sketches and working drawings of some subject to be selected by himself.

48*a*. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, IV Year; Architectural Engineering Option.
A short course of lectures and studio work referring especially to the artistic side of the design of commercial buildings.

49. FREEHAND DRAWING AND WATER COLOR PAINTING:—*C. W. Jefferys.*
Department 4, I Year; 2 hours per week; both terms.
Drawing from still life objects. Primary freehand perspective. Primary pencil and pen and ink rendering.

49*a*. Department 4, II Year; 2 hours per week; both terms.
Drawing and monochrome painting from still life.
Drawing from the cast.
Pencil, pen and ink, and monochrome rendering.
Primary water color.
Drawing from landscape and natural objects.

49*b*. Department 4, III Year; 2 hours per week; both terms.
Drawing from the cast.
Water color from still life. Water color rendering.
Drawing from landscape and natural objects.
Students who are sufficiently advanced are admitted to the Fourth Year Life Drawing Class.

49*c*. Department 4, IV Year; 2 hours per week; both terms.
Water color from still life and from landscape.
Drawing from life.
Water color rendering.

50. MODELLING:—*J. L. Banks.*
Department 4; I Year; 2 hours per week; both terms.
The Orders. Synopsis of styles.

50*a*. Department 4; II Year; 2 hours per week; both terms.
The styles elaborated.
Problems in figures and in relation to architecture.

50*b*. Department 4; III Year; 2 hours per week; both terms.
Styles continued.
Problems, combination of figure, ornament and architecture, and then relative values.

50*c*. Department 4; IV Year; 2 hours per week; both terms.
Modelling from life.
Anatomy.
Composition of groups.

51. STRUCTURAL DESIGN:—*C. R. Young.*
Departments 1 (*Structural Engineering Option*) and 4, IV Year; 1 hour per week; both terms.

This course of lectures is devoted to the problems connected with the structural design of buildings of timber, steel and reinforced concrete. The various structural elements, such as the floors, columns, footings, walls and wind bracing, are fully discussed, and portions of typical buildings are designed in the class and drafting rooms.

Text books:—Architectural Engineering—Freitag; Steel Construction—Tucker; Structural Details—Jacoby; Architects' and Builders' Pocket Book—Kidder.

52. BUILDING MEASUREMENT:—*C. H. C. Wright.*
Department 4, I Year; 1 hour per week; both terms.
In this course of lectures the principles of measurements and mensuration with special reference to buildings will be discussed. With this is combined 4½ hours per week practice in measurements of existing buildings, quantities, etc.

53. BUILDING MATERIALS:—*C. H. C. Wright.*
Department 4, III Year; 2 hours per week; both terms.
The structural and aesthetic value of the various building materials.

54. SANITARY SCIENCE:—*C. H. C. Wright.*
Department 4, IV Year; 1 hour per week; both terms.
Modern plumbing, its design and installation.

54*a*. HEATING AND VENTILATION:—*C. H. C. Wright.*
Department 4, IV Year; 1 hour per week; both terms.
The design of different systems, where they should be used, heating specifications, etc.

ASTRONOMY AND GEODESY.

55. ASTRONOMY, ELEMENTARY:—*C. A. Chant.*
Department 1, II Year; 1 hour per week; both terms.
A course in descriptive Astronomy, explaining the ordinary astronomical terms, and describing the various celestial bodies and their motions. In the evenings opportunity will be given for identifying the stars and for observing with telescopes.
Text book:—New Astronomy—D. P. Todd.

56. ASTRONOMY AND GEODESY:—*L. B. Stewart.*
Department 1, III Year; 2 hours per week.
The course of lectures deals with the determination of time, latitude, longitude and azimuth, by methods adapted to the use of the surveyor's transit and the sextant. It is designed to fulfil the requirements of the final examinations for Ontario and Dominion Land Surveyors.
In Geodesy an account is given of the principles and methods of a secondary triangulation survey, also of the principles involved in the North-West system of survey.
Text book:—Practical Astronomy as applied to Geodesy and Navigation—Doolittle; Nautical Almanac, 1915.

57. FIELD WORK:—*L. B. Stewart, S. R. Crerar.*
Department 1, III Year; about 1 hour per week; first term.
The practical work in this subject comprises observations in the field with the transit and sextant for the determination of time, latitude and azimuth by the methods described in the lectures.

58. ASTRONOMY (Advanced):—*L. B. Stewart.*

Department 1, IV Year; 2 hours per week.

The lecture course in this subject comprises the theory and adjustment of the instruments used in connection with a geodetic survey; the methods of taking and reducing observations for time, longitude, latitude, and azimuth, with the precision required on such a survey; and other matters relating to these subjects.

59. GEODESY AND METROLOGY:—*L. B. Stewart.*

Department 1, IV Year; 2 hours per week.

The lecture course includes a description of the methods of measuring base lines and the angles of a triangulation; the geometry of the spheroid with applications to geodetic problems; the computation of geodetic positions; the solution of large triangles on the earth's surface, and the adjustment of a triangulation; trigonometric and precise spirit levelling; the determination of the figure of the earth by arc measurements, and by the pendulum; the theory of map projections, etc.

60. ASTRONOMY, GEODESY AND METROLOGY:—*L. B. Stewart.*

Department 1, IV Year; about 23 hours per week.

The practical work in the above subjects includes the observation of meridian transits for time and longitude determinations, and of prime vertical transits for latitude, with the astronomical transit instrument; the observation of meridian zenith distances of stars, and of azimuths at elongation for latitude, with the alt-azimuth; theodolite observations for azimuth; observations for latitude with the zenith telescope; the investigation of the constants of the instruments used, and the reduction of all observations; the measurement of a base line with the steel tape and with wires, and the determination of the constants of the tape; the measurement of the angles of a triangulation and the adjustment of the angles of a network of triangles, etc.

BIOLOGY.

61. ELEMENTARY BIOLOGY:—*B. A. Bensley.*

Department 5, I Year; optional in Department 1, III Year; 2 hours per week; both terms.

A course of two lectures a week throughout the session is designed as an introduction to the whole range of biological studies. After a sketch of the scope and objects of these, the lectures will treat (*a*) of the fundamental principles of biology, as illustrated by the simplest animals and plants; (*b*) of typical forms of higher plants in ascending order; (*c*) of typical forms of animals in a similar way; and (*d*) of the structure and functions of the human body.

Students are recommended to make use of the Biological Museum in connection with this course of lectures. For reference: Jeffrey Parker, Elementary Biology; Ramsay Wright, High School Zoology; Atkinson, Elementary Botany; Huxley, Lessons in Elementary Physiology.

62. ELEMENTARY BIOLOGY:—*A. G. Huntsman and J. H. Faull.*
Department 5, I Year; 3 hours per week; both terms.
An elementary course of laboratory work on the general structure and identification of plants and animals, and the use of the microscope in the examination ot tissues and products.

63. ADVANCED BIOLOGY:—*J. H. Faull.*
Department 5, II Year.
A course of instruction on the Morphology and Physiology of Bacteria, Moulds and Yeast Fungi.

63*a*. ADVANCED BIOLOGY:—*J. H. Faull, E. M. Walker.*
Department 1, IV Year.
(*a*) *Botany*:—An elementary lecture and laboratory course of about 3 hours per week, second term, on the economic algæ and fungi.
(*b*) *Zoology*:—Lecture and laboratory course of 4 hours per week, second term, on the morphology, ecology and classification of aquatic animals.

64. BACTERIOLOGY:—*J. A. Amyot.*
Departments 1, 5 and 6, IV Year; a lecture and laboratory course of 8 hours per week, second term, on elementary bacteriology.

BUSINESS.

65. ACCOUNTING:—*W. S. Ferguson.*
All Departments, I Year; 1 hour per week; both terms.
The principles of accounting; illustrated by typical accounts.

66. BANKING AND FINANCE:—*M. A. Mackenzie.*
All Departments, II Year; 1 hour per week; both terms.
Money and the instruments of credit; stocks and bonds.

67. LIMITED COMPANIES:—*J. M. Langstaff.*
All Departments, III Year; 1 hour per week; both terms.
Partnerships; the history and development of the limited liability company; the Companies Acts; Company finance.

68. CONTRACTS AND SPECIFICATIONS:—*C. R. Young.*
Departments 1 and 4, IV Year; 1 hour per week; second term.

This course of lectures deals with the fundamental principles of contract and specification writing. The critical examination of typical specifications and agreements by the class forms an essential feature of the instruction.

Text books:—Engineering Contracts and Specifications—Johnson: Elements of Specification Writing—Kirby; Specifications and Contracts—Wadell-Wait.

69. COST-KEEPING, ETC.:—*J. W. Bain, H. W. Price, L. M. Arkley.*

Departments 2, 3, 5, 6 and 7, IV Year.

Works management, mechanical specifications, analysis of costs, reports.

CHEMISTRY.

75. ELEMENTARY CHEMISTRY:—*J. W. Bain.*

All Departments, I Year; 2 hours per week; both terms.

A lecture course in elementary chemistry dealing with the metals and non-metals, with experimental illustrations.

76. ELEMENTARY CHEMISTRY:—*M. C. Boswell.*

Departments 2 and 6, I Year; 3 hours per week; second term.

A laboratory course to illustrate the use of the sensitive balance, to verify some of the laws which form the basis of the science, and to serve as an introduction to quantitative laboratory methods. Instruction given as required before each period.

77. INORGANIC CHEMISTRY:—*W. H. Ellis.*

Departments 5, 6 and 8, I Year; 1 hour per week; both terms.

A lecture course on the elements and important inorganic compounds, supplementing Course 75.

Text book:—Introduction to General Inorganic Chemistry—Alex. Smith.

78. INORGANIC CHEMISTRY:—*L. J. Rogers.*

Departments 5 and 8, I Year; about 17 hours per week; both terms.

A laboratory course of quantitative experiments illustrating the use of the sensitive balance, and confirming the fundamental laws of chemistry; qualitative inorganic analysis; quantitative analysis of pure salts; inorganic preparations; molar weight determinations.

Text book:—Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

79. INORGANIC CHEMISTRY:—*J. W. Bain.*

Departments 2, 5, 6 and 8, II Year; 1 hour per week; first term.

A lecture course on the chemistry of the metals; a continuation of Course 75.

80. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*

Departments 5 and 8, II Year; Departments 2 and 6, III Year; 1 hour per week: both terms.

A lecture course on the principles of chemical analysis; select gravimetric and volumetric methods; technical analysis.

81. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*

Departments 1, 2, 3 and 7, II Year; 6 hours per week; one term.

Laboratory practice in elementary qualitative and quantitative analysis.

Text book:—A Smaller Chemical Analysis—Newth.

82. ANALYTICAL CHEMISTRY:—*J. W. Bain.*

Department 2, II Year; 3 hours per week; both terms.

A laboratory course in the gravimetric determination of metals and acids, with elementary volumetric analysis.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

83. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*

Departments 5 and 8, II Year; 14 hours per week; 17 weeks.

A laboratory course comprising gravimetric and volumetric methods, acidimetry and alkalimetry.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

84. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*

Department 6, II Year; 6 hours per week; both terms.

A laboratory course in qualitative and elementary quantitative chemical analysis; inorganic preparations.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

85. ENGINEERING CHEMISTRY:—*W. H. Ellis.*

Departments 1, 2, 3, 5, 6, 7 and 8, II Year; 1 hour per week; second term.

A lecture course consisting of a study of the industrial production and application of heat and light, and of the chemistry of fuel and the products of combustion.

86. INDUSTRIAL CHEMISTRY:—*W. H. Ellis.*

Departments 5 and 6, II Year; 1 hour per week; both terms.

A lecture course on the manufacture of salts, acids, alkalies and inorganic chemicals.

Text book:—Inorganic Chemistry—Thorp.

87. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 1, 2, 3 and 7, II Year; 1 hour per week; first term.
A lecture course in elementary organic chemistry.
Text book:—Theoretical Organic Chemistry—Cohen.

88. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 5 and 6, II Year; 2 hours per week; both terms.
A lecture course dealing with the aliphatic compounds.
Text book:—Theoretical Organic Chemistry—Cohen.

89. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 5, II Year; 14 hours per week; 7 weeks.
A laboratory course in organic preparations in the aliphatic series.

90. PHYSICAL CHEMISTRY:—*W. L. Miller.*
Departments 5, 6 and 8, II Year; 2 hours per week; both terms.
A course of lectures on the elements of chemical mechanics, and the theory of solutions.

91. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Department 5, III Year; 19 hours per week; 16 weeks.
A laboratory course on the technical analysis of iron and steel alloys, ores, furnace products, ceramic materials, foods, gases, fuels, etc.

92. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Department 6, III Year; 11 hours per week, first term; 13 hours per week, second term.
A laboratory course in volumetric and technical analysis.

93. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Departments 2 and 8, III Year; 5 hours per week; both terms.
A laboratory course on the technical analysis of ores and furnace products.

94. ENGINEERING CHEMISTRY:—*W. H. Ellis.*
Departments 1, 2, 3, 5, 6 and 7, III Year; Department 4, II Year; 1 hour per week; both terms.
A lecture course on the application of chemistry to engineering problems; air, water, sewage, the materials of construction, explosives, etc.

95. INDUSTRIAL CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, III Year; 1 hour per week; both terms.
A lecture course on petroleum and its products, coal tar and its products, the destructive distillation of wood; fats, oils, soap, sugar, starch, and gums; fermentation industries, etc.
Text book:—Industrial Chemistry—Thorp.

96. CHEMICAL PLANT:—*J. W. Bain.*
Departments 5 and 6, III Year; 1 hour per week; both terms.
A lecture course on the machinery and plant used in chemical manufacturing.

97. ORGANIC CHEMISTRY (A):—*M. C. Boswell.*
Departments 5 and 6, III Year; 2 hours per week; both terms.
A lecture course on the aromatic series.
Text book:—Theoretical Organic Chemistry—Cohen.

98. ORGANIC CHEMISTRY (B):—*F. B. Allan.*
Departments 5 and 6, III Year; 1 hour per week; second term.
A lecture course on stereoisomerism, desmotropism, etc.

99. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 5, III Year; 19 hours per week; 8 weeks.
A laboratory course in organic preparations in the aromatic series; organic analysis.

100. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 6, III Year; 17 hours per week; 4 weeks.
A laboratory course in organic preparations.

101. ELECTROCHEMISTRY:—*W. L. Miller.*
Departments 5, 6, 7 and 8, III Year; 2 hours per week; first term.
A lecture course on elementary electrochemistry, illustrated by experiments.

102. ELECTROCHEMISTRY:—*W. L. Miller.*
Departments 5, 6, 7 and 8, III Year; 3 hours per week; first term.
A laboratory course in quantitative measurements to accompany Course 101.

103. INORGANIC CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on chemical theory.

104. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on advanced organic chemistry.

105. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 5 and 6, IV Year.
A laboratory course in advanced organic chemistry.

106. INDUSTRIAL CHEMISTRY:—*W. H. Ellis, J. W. Bain.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on selected subjects in chemical technology.

107. INDUSTRIAL CHEMISTRY:—*W. H. Ellis, J. W. Bain.*
Departments 5 and 6, IV Year; about 28 hours per week; both terms.
A laboratory course in industrial problems.

108. ELECTROCHEMISTRY:—*W. L. Miller.*
Departments 5, 6 and 7, IV Year; 2 hours per week; both terms.
An advanced lecture course on the theory of solutions and electrolysis, and the application to the practice of electro-deposition and electrolytic refining of metals. The course also includes lectures on the electric furnace with special consideration of efficiency.
Text books:—Electrometallurgy—Borchers; Electrochemistry—Le Blanc; Electrochemistry—Luepke.

109. ELECTROCHEMISTRY:—*W. L. Miller.*
Departments 5, 6 and 7, IV Year; about 28 hours per week.
A laboratory course accompanying Course 108.

110. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on the composition and examination of air, water and food; poisons and their detection.

111. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, IV Year.
A laboratory course accompanying Course 110.

112. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Department 2, IV Year, 12 hours per week; first term.
A laboratory course comprising analysis of ores and furnace products.

113. SANITARY CHEMISTRY:—*H. M. Lancaster, E. G. R. Ardagh.*
Department 1, IV Year.
A lecture and laboratory course of about 16 hours per week for one term on water supply sewage disposal, ventilation, etc.

DESCRIPTIVE GEOMETRY AND DRAWING.

115. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
Departments 1, 2, 3, 6, 7 and 8, I Year; 1 hour per week; both terms.
This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solutions of problems relating to straight lines and planes.

116. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 4, I Year; 1 hour per week; both terms.

This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solution of problems relating to straight lines and planes, special reference being made to the determination of shades and shadows.

117. DRAWING:—*J. R. Cockburn.*

Departments 1 and 2, I Year; about 16 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; the plotting of original surveys; measured drawings.

118. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell.*

Department 4, I Year; about 15 hours per week.

Copying from the flat, lettering, topography, freehand drawing in black and white, both from copies and models; the graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings. Elements and principles of Architecture.

119. DRAWING:—*J. R. Cockburn.*

Department 5, I Year; about 9 hours per week.

Copying from the flat, lettering, measured drawings.

120. DRAWING:—*J. R. Cockburn.*

Departments 3, 6, 7 and 8, I Year; about 20 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings.

121. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Departments 1, 2, 3, 7 and 8, II Year; 1 hour per week; both terms.

This course of lectures is a continuation of the work taken in the first year with the following additions: Problems relating to curved surfaces, principles of shades, shadows and perspective.

122. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 4, II Year; 1 hour per week; both terms.

This course of lectures is a continuation of the work taken in the First Year with the addition of problems relating to curved surfaces, shades, shadows and perspective.

123. Drawing:—*J. R. Cockburn.*

Departments 1 and 2, II Year. Department 1, about 14 hours per week. Department 2, about 7 hours per week; both terms.

Coloring and shading as applied to both topographical and construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

124. Drawing:—*J. R. Cockburn.*

Departments 3 and 7, II Year; about 15 hours per week; both terms.

Coloring and shading as applied to construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics, theory of mechanism and strength of materials; measured drawings; elementary design.

125. Drawing:—*J. R. Cockburn, A. Wellesley McConnell.*

Department 4, II Year; about 18 hours per week; both terms.

Freehand drawing including monochrome and colors; exercises from the orders of architecture; principles of shades, shadows and perspective; elementary architectural design; problems in descriptive geometry relating to solids bound by curved surfaces; solution of problems in optics and strength of materials; measured drawings.

126. Drawing:—*J. R. Cockburn.*

Department 6, II Year.

Same as Department 3, with exception that theory of mechanism is not included.

127. Descriptive Geometry:—*J. R. Cockburn.*

Department 1, III Year; 1 hour per week; one term.

This course of lectures deals with spherical projections, the principles of mapmaking, and the graphical solution of spherical triangles.

128. Drawing:—*J. R. Cockburn, C. R. Young.*

Department 1, III Year; about 12 hours per week.

Principles of mapmaking, spherical projection, plotting of original surveys relating to topographical and railway work; problems in theory of construction; original design of various structures; measured drawings.

129. Drawing:—*J. R. Cockburn.*

Department 2, III Year; 4½ hours per week.

Plotting of original surveys, relating to topographical and railway work and mining; problems in theory of construction; original design; measured drawings.

130. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell, C. R. Young.*
Department 4, III Year; about 16 hours per week, first term; 22 hours per week, second term.
Advanced work in monochrome and colors; problems in shades, shadows and perspective; architectural design; problems in theory of construction, including framed structures.

131. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
Department 4, III Year; 1 hour per week; first term.
Advanced work in shades, shadows and perspective.

132. DRAWING:—*J. R Cockburn, C. R. Young.*
Departments 2, 3 and 6, III Year; 3 hours per week; both terms.
Problems in design dealing with the theory of structures.

ELECTRICITY.

135. MAGNETISM AND ELECTRICITY:—*H. W. Price.*
Departments 3, 5, 6 and 7, I Year; Department 8, II Year; 2 hours per week; first term.
A course of lectures on general principles relating to magnetism, electricity, electromagnetism, electrostatics, etc., illustrated largely from engineering apparatus.
Text book:—Elementary Electricity and Magnetism—S. P. Thompson.

136. ELECTRIC CIRCUITS:—*W. S. Guest.*
Departments 3, 5, 6 and 7, I Year; 2 hours per week; second term.
This course of lectures concerns chiefly fundamental principles relating to electric circuits, and leads to consideration of such problems as the distribution of electric energy through lines and networks and the division of load between generators.
Text book:—Electrical Problems—Hooper and Wells.

137. ELECTRICITY:—*W. S. Guest.*
Departments 3, 5, 6 and 7, I Year; 3 hours, alternate weeks; both terms.
A laboratory course of experiments, given in logical order, designed to demonstrate fundamental principles in connection with the generation and flow of currents in electric circuits. The work is associated with the lecture courses, magnetism and electricity, and electric circuits (135, 136).

138. ELECTRICITY:—*T. R. Rosebrugh.*
Departments 3, 5, 6 and 7, II Year; 2 hours per week; both terms.

Deals with the theory of electrical measurements, and detailed study of various methods applicable under different conditions in engineering practice to the measurement of resistance, current, potential difference, power and energy; calibration of commercial measuring instruments. The effect of choice of conditions of measurement on the accuracy of the result is considered.

Text book:—Electrical Measurements—Carhart and Patterson.

139. ELECTRICAL LABORATORY:—*W. S. Guest.*

Departments 3, 5, 6 and 7, II Year; 2½ hours per week; both terms.

This laboratory course is closely associated with the lecture course 138 on electricity for the second year. The more important and useful methods of testing generators and circuits for electromotive force, resistance, current, grounds, etc., are practised, often under conditions such as occur in practice. The work also includes methods of calibration of measuring instruments for voltage, current, power and energy, and certain studies of properties of incandescent lamps.

140. ELECTRICITY:—*H. W. Price.*

Department 8, II Year; Department 2, III Year; Departments 1 and 4, IV Year; 1 hour per week.

A course designed to fit the requirements of non-electrical students. A study of essential principles is followed by discussion of electrical apparatus plants, power transmission, railways, etc.

Text book:—Elementary Electricity and Magnetism—Jackson.

141. POWER:—*H. W. Price.*

Departments 2, 6 and 8, IV Year; 24 hours.

Under the name "Power" a number of operating experiments are arranged to afford some familiarity with measuring instruments and direct and alternating current machinery.

142. MAGNETISM AND ELECTRICITY:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 2 hours per week; both terms.

A course of lectures on theory of magnetism and magnetic circuits, theory of direct current generators, motors, etc.

Text book:—Elements of Electrical Engineering, Vol. I—Franklin and Esty.

143. ALTERNATING CURRENT:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 1 hour per week.

A first course of lectures on alternating current, covering principles of measurement and leading to the analytical and graphical treatment of the simpler problems relative to alternating current circuits and machinery.

Text book:—Elements of Electrical Engineering, Vol. II—Franklin and Esty.

144. ELECTRICAL LABORATORY:—*T. R. Rosebrugh, H. W. Price.*
Departments 3 and 7, III Year; 6 hours per week.
This laboratory course is intended to afford the student an opportunity to become familiar with principles involved in continuous current shunt, series and compound wound generators and motors, and, to some extent, alternating current circuits and machinery. Other sections of the work deal with the magnetic properties of iron and steel, and study of iron losses in transformers and generators.
The course is arranged to stand in close relation to the lecture courses in the subjects of magnetism and electricity and alternating current (142, 143) for III Year, and to certain design work (145).

145. ELECTRICAL DESIGN:—*H. W. Price.*
Department 7, III Year; 1 hour per week.
A course of lectures dealing with design of electric machinery and plants, accompanied by designs to be worked out in the design room.
References:—Dynamo-electric Machinery—S. P. Thompson; Electric Machine Design—Parshall and Hobart.

146. ELECTRICAL DESIGN:—*H. W. Price.*
Department 7, III Year.
A design room is set apart for working out designs of electrical apparatus such as transformers, generators, motors, auxiliary apparatus, etc.
Special forms and notes are employed, arranged to suit the various studies. Certain models are provided to assist where necessary.

147. APPLIED ELECTRICITY;—*T. R. Rosebrugh.*
Department 7, IV Year.
This course deals by analytical and vector methods with the theory of alternating current circuits and machinery. Applications of theory are considered with regard to transformers, single and polyphase generators, synchronous motors and rotary converters, induction and commutating series motors, transmission lines, wave analysis, etc.

148. ELECTRICAL LABORATORY;—*T. R. Rosebrugh, H. W. Price, R. H. Hopkins.*
Department 7, IV Year, in connection with 147.

This laboratory course involves a thorough study of principles and properties of single and polyphase circuits and apparatus. Both vector and analytical methods are applied to the solution of problems based on tests made on laboratory machines.

The work deals mainly with constant voltage and constant current transformers, single and polyphase alternators, synchronous motors, rotary converters, induction and single phase commutating motors, transmission line, etc. The work does not consist only of factory tests, but is designed to lead the student to apply theory to practice as illustrated in the apparatus under test, with a view to an exact understanding of methods and an appreciation of limitations under many conditions. Free use is made of the oscillograph as a necessary device for "seeing" conditions under investigation. The best commercial measuring instruments are available.

GEOLOGY.

150. GEOLOGY (Elementary):—*A. P. Coleman.*

Departments 2 and 5, II Year; Department 1, III Year; 1 hour per week; both terms.

This course deals chiefly with historical geology with special reference to Canadian formations.

Reference books:—Introduction to Geology—Scott; Text Book of Geology—Dana.

151. ECONOMIC GEOLOGY. (Including Dynamical and Structural Geology):—*A. P. Coleman.*

Department 2, III Year; 2 hours per week; both terms. Department 1, IV Year.

A study of the more important economic rocks, minerals and ores with their geological associations. Special attention paid to Canadian deposits.

152. ADVANCED GEOLOGY:—*A. P. Coleman.*

Department 2, IV Year.

(A) *Pre-Cambrian Geology.*—An account of the Keewatin, Huronian and Laurentian rocks of Canada, with their distribution, structural relations and economic features, and briefer accounts of similar formations in the United States and elsewhere.

Works of Reference:—Reports of the United States and Canadian Geological Surveys, of the Bureau of Mines of Ontario, etc.

(B) *Pleistocene Geology.*—Lectures on the formation and distribution of the drift deposits of North America, with brief references to other regions. Glacial, Interglacial and Postglacial beds are described, changes of climate are discussed with their probable

causes, and the economic features of the clays, sands and gravels are pointed out. A weekly excursion is made during October and November to points of interest near Toronto, which is the centre of the most important development of Pleistocene in America.

(C) *Physiography.*—A course of lectures on the surface forms of the earth, with the geological factors which have produced them. The broad features of the earth, its plains, tablelands, hills, valleys, mountains, oceans, rivers and lakes are discussed in a general way, methods of topographical surveys and mapping are referred to, and the chief physiographic areas of Canada are described.

153. MINING GEOLOGY:—*A. P. Coleman.*

Department 2, IV Year; 1 hour per week; both terms.

A course of lectures on geological problems associated with mining, typical mining regions in Canada, the United States and elsewhere being discussed from the geological side.

Works of reference:—Mineral Industry and the books mentioned under (A).

154. GEOLOGICAL EXCURSIONS:—*A. P. Coleman.*

Department 2, IV Year.

Trips to points of interest in the vicinity of Toronto.

155. ORE DEPOSITS:—*A. P. Coleman.*

Department 2, III Year; 1 hour per week; both terms.

Discussion of the origin and classification of ore deposits in a general way, the mode of occurrence of the chief metals, and statistics of production, special attention being given to the metals mined in Canada.

156. ECONOMIC GEOLOGY:—*W. A. Parks.*

Department 2, III Year; 1 hour per week; both terms.

Laboratory work on ores, manner of occurrence, vein structure, etc. Geological maps of typical mining regions.

MINERALOGY.

157. ELEMENTARY MINERALOGY:—*J. E. Thomson.*

Department 5, I Year; Department 2, II Year; 2 lectures per week; first term.

After introducing the student to the chief chemical, physical and crystallographic characteristics of minerals, the course becomes descriptive and deals with about one hundred of the minerals most important from the industrial or scientific point of view.

Text books:—Minerals and how to study them—Dana; Text Book of Mineralogy—Dana.

158. MINERALOGY:—*J. E. Thomson.*

Department 5, I Year; 4 hours per week, first term; 3 hours per week, second term.

Introduction to blow-pipe analysis, determination of minerals by inspection and physical tests.

Text books:—Text Book of Mineralogy—Dana; Determinative Mineralogy—Lewis.

159. PRIMARY MINERALOGY:—*A. L. Parsons.*

Department 1, II Year; 2 hours per week; first term.

A very brief introduction to the study of minerals and rocks.

Text books:—Minerals and how to study them—Dana; Handbook of Rocks—Kemp.

160. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*

Department 2, II Year; 1 hour per week, first term; 3 hours per week, second term.

Determination of minerals by inspection and by means of physical tests; introduction to blow-pipe practice.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy—Lewis.

161. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*

Department 1, II Year; 1 hour per week, first term; 2 hours per week, second term.

Determination of minerals by inspection and by means of physical tests; study of common rock types and their identification.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

162. MINERALOGY:—*A. L. Parsons.*

Department 5, II Year; 1 hour per week; second term.

Introduction to the study of rocks; determination of minerals and rocks by means of tables based on the physical properties.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

163. ELEMENTARY PETROGRAPHY:—*T. L. Walker.*

Department 2, III Year; 1 hour per week.

A course of lectures and laboratory work introducing the student to the macroscopic study of rocks.

Text books:—Handbook of Rocks—Kemp; Rocks and rock minerals—Pirsson.

164. MINERALOGY:—*J. E. Thomson.*

Department 2, III Year; 2 hours per week.

Determination of minerals by means of the blow-pipe and physical properties.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy—Lewis.

165. GENERAL PETROGRAPHY:—*T. L. Walker.*
Department 2, IV Year. 1 hour per week.
Study of the chief rock-forming minerals and of some phases of petrography not covered in the course of the previous year.

166. PETROGRAPHY:—*T. L. Walker.*
Department 2, IV Year; 2 hours per week; both terms.
Study of the chief rock-forming minerals, of rocks in thin sections and in hand specimens.
Text books:—Rocks and Rock Minerals—Pirsson; Minerals in Rock Sections—Luquer.

167. CRYSTALLOGRAPHY:—*A. L. Parsons.*
Department 5, III Year; 1 hour per week.
A course devoted to lectures and practical work on the geometrical and optical properties of crystals, preparing the student for the study of rocks in thin sections and for the examination of crystallized substances, natural and artificial, under the polarizing microscope.

168. MINERALOGY:—*J. E. Thomson.*
Department 8, I Year; 1½ hours a week, second term.
Determination of minerals by means of the blow-pipe.
Text Book:—Lewis, Determinative Mineralogy.

169. MINERALOGY:—*A. L. Parsons.*
Department 8, II Year; 1 hour per week.
Determination of minerals by physical properties.
Text Book:—Mineral Tables—Eakle.

MINING, ASSAYING AND ORE DRESSING.

170. MINING:—*H. E. T. Haultain.*
Department 2, II Year; 1 hour per week; first term. Department 8, II Year; 1 hour per week; both terms.
An introduction to the study of mining and ore dressing methods.

171. MINING AND ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Department 2, II Year; 3 hours per week; second term.
Introductory work with rock-drills and various ore dressing appliances.

172. MINING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, III Year; 1 hour lecture per week, both terms; 3 hours' laboratory work per week, one term.
General mining methods.

173. ASSAYING:—*H. E. T. Haultain, J. T. King.*
Departments 2, 5 and 6, III Year; 1 hour lecture per week, one term; 3 hours' laboratory work per week, both terms.
Assaying of various ores for gold, silver, lead and copper.

174. ASSAYING:—*H. E. T. Haultain, J. T. King.*
Department 2, IV Year; 1 hour lecture per week, one term; 3 hours' laboratory work per week, one term.
Continuation of the work of III Year.

175. MINING:—*H. E. T. Haultain.*
Department 2, IV Year; 1 hour lecture per week; both terms.
Special mining methods, examinations, reports.

176. MILLING:—*H. E. T. Haultain, F. C. Dyer.*
Department 2, IV Year; 3 hours' laboratory work per week; both terms.
Advanced work with ore dressing appliances, complete mill tests.

177. ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, III Year; 1 hour per week; both terms.

179. ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Department 2, IV Year; 1 hour per week; both terms.

METALLURGY.

180. METALLURGY:—*G. A. Guess.*
Departments 2, 5 and 6, IV Year; 1 hour per week; both terms.
Advanced studies in the metallurgy of gold, silver, copper and lead, etc.

181. FERRO-METALLURGY:—*T. R. Loudon.*
Departments 1, 2, 3, 5, 6, 7 and 8, III Year; 1 hour per week; both terms.
The physical properties of iron and steel and the circumstances that influence the strength, etc., of iron. The different modes of manufacture of iron and steel and the effect of different processes of making on the resulting products; explanations of specifications for iron and steel adopted by engineers.

182. METALLURGY:—*G. A. Guess, W. S. Bishop.*
Department 2, IV Year; 6 hours' laboratory work per week; second term.
Calibration of pyrometers, blast furnace smelting and copper converting, cyanidation, acid leaching of copper ores, electrolytic refining of lead and copper, electrometallurgy.

183. METALLURGY:—*G. A. Guess, W. S. Bishop.*

Departments 2, 5, 6 and 8, II Year; 1 hour per week; one term.

An introduction to the study of general metallurgy.

184. METALLURGY:—*G. A. Guess.*

Departments 2, 5 and 6, III Year; 1 hour per week; both terms.

General metallurgy of gold, silver, lead and copper.

185. METALLURGY:—*W. S. Bishop.*

Department 8, II Year; 1 hour per week, both terms.

A lecture course in the study of metallurgical fuels, their use, preparation, calorific value and temperature of combustion, introduction to the study of metallurgical processes. Problems.

Two hours' laboratory work, second term.

186. METALLURGY:—*G. A. Guess.*

Department 8, III Year; 1 hour per week; first term; 4 hours per week; second term.

The uses, properties and metallurgy of the metals except iron, with special reference to copper, nickel, lead and zinc. The study of clays and their industrial uses. A laboratory course of 100 hours.

186*a*. METALLURGY:—*G. A. Guess, W. S. Bishop.*

Department 8, IV Year; 2 hours per week, both terms, and 9 hours' laboratory work, both terms.

Lixiviation of copper ores, design and organization of plants, metallurgical book-keeping, metallurgical balance sheets, thermal balance sheets, electrometallurgy, electrolytic refining processes, a particular study of Canadian problems.

MATHEMATICS.

187. ALGEBRA:—*A. T. DeLury.*

All Departments, I Year; 2 hours per week; both terms.

Simple equations of one, two and three unknown quantities; quadratic equations of one and two unknown quantities; graphic representation of functions and the introduction of the gradient function; proportion and progressions; interest forms and annuities, permutations, combinations, limits, the general theory of infinite series, binomial theorem, exponential and logarithmic series.

Text book:—Intermediate Algebra—DeLury.

188. ANALYTICAL GEOMETRY:—*J. R. Pounder.*

All Departments, I Year; 1 hour per week; both terms.

The course in Elementary Analytical Geometry covers the more familiar propositions in connection with the straight line, circle, parabola, ellipse and hyperbola. The subject is treated so as to illustrate the general methods of analytical geometry.

189. TRIGONOMETRY, PLANE:—*M. A. Mackenzie.*

All Departments, I Year; 2 hours per week; first term.

Solutions of triangles and practical problems.

Text book:—Practical Trigonometry—Plane and Fawdry.

190. CALCULUS, DIFFERENTIAL AND INTEGRAL:—*S. Beatty.*

Departments 1, 2, 3, 4, 6, 7 and 8, II Year; Department 5, II Year, optional; 2 hours per week; both terms.

This is an elementary course in the infinitesimal calculus, but adequate to afford a knowledge of the character and methods of the subject and to enable students in chemistry, engineering, etc., to understand such of their text books as introduce the calculus.

191. TRIGONOMETRY, SPHERICAL:—*L. B. Stewart.*

Department 1, II Year; 1 hour per week; first term.

A course of lectures includes the derivation of formulæ and their application to the solution of triangles and to practical problems.

Text book:—Spherical Trigonometry—Todhunter and Leatham.

192. LEAST SQUARES, METHOD OF:—*L. B. Stewart.*

Department 1, III Year; 1 hour per week; first term.

The course of lectures includes: The general principles of probability, the law of error, direct measurements of equal and different weights; mean square and probable errors; indirect measurements; conditioned observations; applications to empirical constants and formulæ, etc.

Text book:—Least Squares—Merriman.

TECHNICAL PHYSICS.

195. ACOUSTICS:—*G. R. Anderson.*

Department 4, III Year.

Wave motion, propagation, reflection and transmission of sounds. Laws of vibrating strings, pipes and forks. Velocity of sound. Musical scales. Absorption of sound by various substances, use of deadening material in buildings. Amount of reverberation permissible and desirable in public buildings. Lectures and laboratory work.

196. HYDROSTATICS:—*G. R. Anderson.*

All Departments, II Year.

Laws of fluid pressure and application to machines. Density of solids and fluids, theory of flotation.

Lectures and laboratory work. Spring term.

197. OPTICS:—*G. R. Anderson.*

All Departments, II Year.

Rectilinear propagation of light, illumination, photometry, light standards. Distribution of light by reflectors and diffusers, general and selective absorption, economic values of artificial lights.

Laws of reflection and refraction, theory of optical instruments.

Light considered as wave motion, dispersion, spectrum analysis, colour phenomena, polarization.

Lectures and laboratory work, Fall term.

198. HEAT:—*G. R. Anderson.*

Departments 1 and 5, III Year.

Generation and propagation of heat. General and industrial thermometry, calorimetry and pyrometry. Linear and cubical expansion, gas laws. Specific heat of solids, liquids and gases, latent heat of fusion and vaporization. Mechanical equivalent of heat. Carnot cycle.

Lectures and laboratory work, Fall term.

199. PHOTOGRAPHY:—*G. R. Anderson.*

Departments 1 and 4, III Year; Departments 3 and 7, IV Year.

The camera and its adjustments, lenses, shutters, screens. Plates for various purposes, films, prevention of halation. Lighting, exposure, development. Paper of various kinds, printing, enlargement and reduction, blue printing and allied processes. Record photography, photogrammetry and photo-surveying. Photography in colour.

Lectures Fall term, and laboratory work both terms.

SURVEYING.

205. SURVEYING:—*S. R. Crerar.*

Departments 1 and 2, I Year; 1 hour per week; both terms.

The lecture course includes the general principles; surveying with the chain, the compass and chain and the transit and chain; the applications of trigonometry to inaccessible heights and distances; mensuration of surfaces and solids, co-ordinate surveying, division of land, etc.

Text-books:—Land Surveying—Gillespie; Theory and Practice of Surveying—Johnson.

206. FIELD WORK:—*S. R. Crerar.*

Departments 1 and 2, I Year; 9 hours per week; first term.

This course comprises testing chains; practice in chaining; a complete survey of a piece of land with the chain; keeping of field notes; the use of the compass and transit in surveying closed figures and traverse lines and in ranging straight lines; plotting by latitudes and departures, and otherwise computing areas.

207. SURVEYING:—*W. M. Treadgold.*

Departments 1 and 2, II Year; 1 hour per week; both terms.

This course of lectures takes up in detail, simple, reverse and compound curves as applied to railroad surveying. It also includes stadia, plane table and photographic surveying as applied to topographic work, and also the main features of mine and hydrographic surveying.

Text books:—Henck, Shunk, Searles, Allen (Field books for Engineers) Theory and Practice of Surveying—Johnson; Plane Surveying—Raymond.

208. FIELD WORK:—*W. M. Treadgold, E. W. Banting.*

Departments 1 and 2, II Year; 9 hours per week; first term.

This course of instruction embraces all adjustments of the transit, accurate determination of angles of closed figure, minor problems in triangulation—ordinary and special problems as applied to railroad work in regard to curves, simple, reverse and compound, profile levelling and plotting of profile.

209. SURVEYING AND LEVELLING:—*W. M. Treadgold.*

Departments 1 and 2, III Year; 1 hour per week.

This course of lectures takes up the work of the railroad engineer on construction, including profiles, cross sectioning, computation of volume of earthwork, overhaul, transition curves, laying out turnouts, frogs and switches, etc.

Also a discussion of trigonometric and barometric levelling.

Text books:—Field Engineering—Searles; Railroad Curves and Earthworks—Allen.

210. FIELD WORK:—*W. M. Treadgold, E. W. Banting.*

Departments 1 and 2, III Year; about 9 hours per week; first term.

This includes adjustments of levels and accurate check differential levelling, determination of profile, cross sectioning and computation of earthwork of located line on ground and plotting of same; also cross sectioning by use of hand level. A complete stadia topographic survey is made and plotted.

ADDITIONAL, FOURTH YEAR OPTIONS.

211. RAILWAY ENGINEERING:—*W. M. Treadgold.*

Department 1, IV Year; about 2 hours per week.

The object of this course is to make the student acquainted with the general principles of railroad and street railway engineering, and the subject will be studied from the standpoint of economic theory of location; train resistance; effect of grade, distance and curvature and rise and fall; maintenance of way; yards and terminals; tunnels, and street railway practice.

212. FIELD WORK:—*W. M. Treadgold.*

Department 1, IV Year; about 11 hours per week; first term.

The work consists of an original survey for a railroad some one or two miles in length, the work being conducted according to the most modern methods of location. Upon the completion of this work a contour map of the district surveyed is plotted in the drafting room and a line adjusted to it. This is staked out in the field, profiles taken and complete estimates of the cost of construction made.

213. SANITARY ENGINEERING.

Sanitary Chemistry (113).

Advanced Biology (63*a*).

Bacteriology (64).

Hydraulics (32*b*).

Sanitary Engineering:—A lecture course of 1 hour per week, both terms, in which consideration is given to the problems of water supply and sewage disposal as viewed by the engineer. Some practice in the design of works from assumed data is afforded.

Reference books:—Sewage Disposal—Kinnicutt, Winslow & Pratt; Sewage Disposal—Fuller; Water Supplies—Turneaure & Russell.

214. HIGHWAY ENGINEERING:—

Department 1, IV Year.

A lecture and laboratory course of about 8 hours per week, dealing with materials, design and construction of highways and pavements and the testing of various materials used in such work.

215. STRUCTURAL ENGINEERING:—

Students in Civil Engineering who desire to specialize in the subjects best fitting them for designing or constructing engineers on bridge-building or other analogous work, may do so by selecting the Structural Engineering Option in the fourth year. In addition to the obligatory subjects, the following lecture and laboratory courses are provided for those selecting this option:

Theory of Structures (16).

Strength and Elasticity of Materials (17).

Iron and Steel (23).

Reinforced Concrete (22).

Structural Design (51).

Mill Building Design (24).

Miscellaneous Structures (24*a*).

216. ARCHITECTURAL ENGINEERING:—

Architectural students desiring to give special attention to the structural design of buildings may do so by electing to take the Architectural Engineering Option in the fourth year. The following subjects, in addition to those required of all students in the fourth year in Architecture, are required:

Structural Design (51).
Mill Building Design (24).
Architectural Design (48*a*).

MODERN LANGUAGES.

217. FRENCH:—*P. Balbaud.*

Required in Department 4, optional in Departments 1, 2, 3 and 7, I and II Years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

218. GERMAN:—*G. H. Needler, P. W. Mueller.*

Required in Departments 5 and 6, all years, optional in Departments 1, 2, 3 and 7, I and II Years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

THESIS.

219. THESIS.

Required in all Departments, IV Year.

Each student is required to prepare a thesis of between six thousand and seven thousand words on a subject approved by Council. See circular of information.

VACATION WORK.

220. CONSTRUCTION NOTES. See special circular of information.

OUTLINE OF VACATION WORK

CONSTRUCTION NOTES.

II and III Years.

The construction notes required consist of neat and complete dimensioned sketches in pencil of any structures, machines or plants which may be of interest. Any object chosen should be represented and dimensioned in such a manner that it could be completely constructed from the notes as the only available information.

From students in Department 2, who have been actually engaged during the summer with Government or other approved geological survey parties, geological field notes will be accepted in lieu of construction notes.

MASTER OF APPLIED SCIENCE DEGREE.

1. A candidate for the degree of Master of Applied Science (M.A.Sc.) shall hold the degree of Bachelor of Applied Science (B.A.Sc.) of this University.
2. He shall spend not less than one academic year in attendance as a student, in the Faculty of Applied Science, on a course of study approved by the Council.
3. He shall present a satisfactory thesis on a subject approved by the Council.
4. He shall pass such examinations as the Council may decide.
5. The candidate must register at the beginning of the academic year.

PROFESSIONAL DEGREES.

The attention of graduates is directed to the following regulations respecting professional degrees.

The following degrees have been established: Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem.E.), subject to the following regulations:

1. A candidate for one of the said degrees shall hold the diploma of the School of Practical Science or of the Faculty of Applied Science and Engineering and the degree of Bachelor of Applied Science except in the case provided for in clause 11 hereunder.
2. He shall have spent at least three years after receiving the degree of Bachelor of Applied Science in the actual practice of the branch of engineering wherein he is a candidate for a degree.
3. Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.

4. Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidate's professional experience for the purpose of clauses 2 and 3.

The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.

5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree, the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.

The candidate may be required at the option of the Examiners to undergo an examination in the subject of this thesis.

6. Notice in writing shall be sent to the Secretary not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Examiners.

7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Secretary not later than the first day of April.

8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Examiners.

9. The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.

10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the University.

11. Candidates who graduated from the School of Practical Science before June, 1905, shall not be required to hold the degree of Bachelor of Applied Science.

EXTRACTS FROM SURVEY ACTS.

From the Ontario Act Respecting Land Surveyors and Survey of Lands (R.S.O.).

"26. Any person serving as an apprentice as hereinbefore provided, may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practise as a land surveyor, but the total period of such apprenticeship and of course of study shall not exceed the

period of four years from the date of the articles of apprenticeship as above mentioned, and not less than three years of the said period of four years shall be passed in the actual service of a practising Ontario Land Surveyor.

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"28. The privilege of a shortened term of apprenticeship shall also be accorded to any graduate of the Royal Military College at Kingston or of the Ontario School of Practical Science in civil engineering or in mining engineering, or of the McGill College, Montreal, in civil engineering or in mining engineering, and such person shall not be required to pass the preliminary examination hereinbefore required for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor duly filed as required by section 32 of this Act, during twelve successive months of actual practice, after which, on complying with all the other requirements, he may undergo the examination prescribed by this Act.

"29. Such person at any time during his apprenticeship may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practise as a land surveyor, but the total period of such apprenticeship, and of course of study, shall not exceed the period of two years from the date of the articles of apprenticeship as above mentioned, and not less than twelve months of the said period of two years shall be passed in the actual service of a practising Ontario Land Surveyor."

From Act Respecting Manitoba Land Surveyors.

"28. (1) The privilege of a shortened term of apprenticeship shall be accorded to graduates of the Royal Military College of Canada and to graduates in civil engineering of the University of McGill College of Montreal, the School of Practical Science of Toronto, the School of Mining at Kingston, and graduates of Manitoba University who have taken first or second class honours in the special course in mathematics; and such graduates shall not be required to pass the preliminary examination hereinbefore prescribed for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor, duly filed as required by section 24 of this Act, during twelve successive months of actual practice of which at least six months shall be at actual practice in the field, after which, on complying with the other requirements of this Act, he may undergo the examination for commission to practise prescribed by this Act."

From British Columbia Land Surveyors' Act, 1905.

"52. Whosoever shall have followed, during at least two years, a regular course of studies in all the branches of the sciences required by law in order to be received as a land surveyor; who has attended the lectures of a British university or college where a complete course of theoretical and practical instruction is given in civil engineering, physics, and all other branches of sciences required by law in order to be admitted as a land surveyor, and who has received from such university or college, after a regular examination, his diploma or degree of a civil engineer or land surveyor, on satisfying the Board that he is duly qualified as aforesaid, may, without undergoing the examination for admission to the study of land surveying, be received as a student by any member of the Corporation practising in this Province, and shall be bound to perform only twelve months' actual service in the field as such, or, if he has obtained his degree or diploma as a civil engineer or land surveyor in less than two full years, then only such time of service which, added to the time he has devoted to his course of studies, shall complete the period of three full years; and, at the expiration of the said active service, such person, on complying with the other provisions of this section, shall have the right to present himself and undergo the examination required by law, and, if qualified, to be admitted to practise as a land surveyor for the Province as if he had served his three full years under his indentures with a practising land surveyor; but instead of paying fifty dollars he shall be obliged to pay sixty dollars as fees for his examination and commission as land surveyor."

The above section is to be taken collectively as a whole. No separate clause or sentence can be applied to any particular case.

From the Dominion Lands Act, 1908.

"Every graduate in surveying of the Royal Military College of Canada, and every person who has followed a regular course of study in all the branches of education required by this Act for admission as a Dominion land surveyor, for at least two years, in any college or university where a complete course of theoretical and practical instruction in surveying is organized, and who, after examination, has thereupon received from such college or university a diploma or certificate, shall be exempt from serving three years as aforesaid, and shall be entitled to examination for a commission after being admitted upon examination as aforesaid as an articled pupil and serving one year under articles with a Dominion land surveyor, including six months' actual practice with him in the field, on producing an affidavit from the said surveyor in said Form C, together with his own affidavit in said Form D, that he has served for one year as herein provided; but it shall rest with the Board to decide whether the course of instruction in such college or university meets the requirements of this section."

EXTRACT FROM THE ONTARIO ARCHITECTS' ACT.

"Any student who has matriculated in Arts in any university in His Majesty's dominions, or in the Ontario School of Practical Science, shall not be required to pass the preliminary examinations.

"23. Any person who applies for admission to registration as an architect after the coming into force of this Act, shall not be less than twenty-one years of age, shall have served as a student not less than five years with a principal or principals entitled to register under this Act, or with any other principal or principals approved by the Council, and have passed such qualifying examinations as may be required by this Act.

"24. (3) Any person who has graduated from the Ontario School of Practical Science shall be required to serve only three years as a student, one of which three years may be served during the vacation of such school.

"(4) Upon and after the passing of this Act, students shall serve such term as is required to be served by the provisions of this Act, under indenture to a registered architect, which indenture and any assignment thereof with affidavit of execution thereto attached shall be filed with the Registrar upon payment of such fees as the Council may by regulation direct."

LABORATORY EQUIPMENT.

THERMODYNAMIC AND MECHANICAL LABORATORY.

The University in 1909 completed the erection of a large, well-equipped building for the accommodation of the steam, gas, mechanical and hydraulic laboratories A more complete description of the laboratories has been published elsewhere, so that the present description is only intended to give the main features.

The part of the building set apart for thermodynamics and other mechanical work is the ground floor of a room 60 ft. x 155 ft. This room is lighted entirely from the roof in a very perfect way. A part of the space 40 ft. wide running the entire length of 155 feet is served by a 3-ton travelling crane and contains the following equipment:

50 h.p. Brown engine with separate jackets on both heads and barrel of cylinder.

Two-stage Rand air compressor having compound steam cylinders, each fitted with Meyer cut-off gear. The low pressure air cylinder has Corliss inlet gear.

30 h.p. high-speed Leonard tandem compound engine with shaft governor.

15 h.p. high-speed McEwen engine.

75 h.p. two-line compound Willans engine.

15 h.p. DeLaval turbine with special nozzles for condensing and non-condensing tests.

Two 15 h.p. Leonard engines with different types of valves, which are used for valve setting.

There are also two surface condensers with air pumps so arranged that any engine in the laboratory may be made to exhaust into the atmosphere through an open heater or into one of the condensers, the change from one arrangement to the other being accomplished in a few minutes without the aid of valves.

The laboratory further contains:

A 3-ton York refrigerating machine with tanks.
An Amsler transmission dynamometer.
Apparatus for testing injectors and steam pumps.
Numerous other pieces of apparatus and instruments.

The work on internal combustion engines and producers is performed on the following:

18 h.p. Canada suction gas producer.

14 h.p. National gas engine arranged for various compressions and points of ignition.

10 h.p. Fielding and Platt engine for city gas or coal oil, having various adjustments.

8-h.p. Otto gas engine.

6 h.p. marine gasoline engine.

Ericsson air engine.

Various accessories to above machines.

Steam for the laboratory is supplied by two 50 h.p. and one 100 h.p. Babcock and Wilcox boilers, the latter having an internal superheater. These boilers are located in a separate boiler room. They are used for experimental work only and are fitted up for testing. The gases pass up through two independent chimneys, and these have been arranged so that the draft and other conditions in the chimney at any point of its height may be examined.

In smaller work-rooms off the main laboratory are placed belt and oil testing machines, apparatus for testing the efficiency of gears and machines, and for experiments in the balancing of machinery.

HYDRAULIC LABORATORY.

The hydraulic laboratory occupies two floors each 40 feet x 112 feet, which are well lighted by large windows on the side and end.

The water for the experimental work is pumped through the various pieces of apparatus from a well by means of two turbine pumping units, both of which are driven by a Belliss and Morcom compound engine of 125 h.p. running at a speed of 525 revs. per minute. Both engine and pumps have been installed with a view to using them in experimental work as well as for supply of water for other apparatus used in the laboratory.

The pumping units are capable of delivering one cubic foot of water per second against heads of 250 feet and 300 feet respectively. These units are designed and connected up so that they may be run in series giving the above discharge at 550 feet head, or they may be run in parallel giving double the discharge at a lower head. Each pumping unit consists of two two-stage pumps mounted on a common base and driven by a single pulley, and the construction and piping are such that each two-stage pump may be driven separately or that all may be driven at once, discharging separately one cubic foot per second at about 125 feet head through each of four independent pipes, or else the pumps may be run in series or in parallel. The scheme is thus well adapted to laboratory work, and under the heads used on reaction turbines about six cubic feet per second may be obtained.

The laboratory further contains a large vertical steel tank 5½ feet diameter by 34 feet high with arrangements for the attachment of nozzles and other mouthpieces, etc. Connections are also arranged for reaction turbines, the tank acting as a reservoir.

The discharge from the turbines or nozzles is measured in a weir tank nearly 6 feet wide and 21 feet long, containing a contracted weir 4½ feet wide. This weir may be calibrated by two weighing tanks, each having a capacity of about 240 cubic feet.

There are three reaction turbines and two impulse wheels all ready for experiment, the power being measured by brakes and the water by weir or orifices. Amongst the reaction turbines may be mentioned the one designed and built by Escher Wyss & Co., specially for the laboratory.

Smaller orifice and weir tanks, each about 3 x 3 x 12 feet with necessary measuring tanks, are arranged for instruction in coefficients of various kinds and practice with weirs and orifices.

A Venturi meter and other meters, also an hydraulic ram and similar devices are available for testing, and good facilities have been arranged for investigating friction and other properties of pipes and fire hose.

For special investigations on turbine and centrifugal pumps, other pumps in addition to those already described have been arranged.

The basement of the laboratory contains an open trough 5 feet wide, about 110 feet long, with a large weir at one end. It is intended to use this trough for experiments on the flow in open channels, for measurements of large discharges by means of the weir, and for experiments with current meters and Pitot tubes.

Numerous pieces of smaller apparatus, together with all instruments required, have also been provided, and the laboratory equipment is believed to be very complete.

DONATIONS TO THE THERMODYNAMIC AND HYDRAULIC LABORATORIES.

The following donations to the equipment of the laboratories have been made through the kindness of those mentioned:

50 h.p. Wheeler Surface Condenser, presented by Mr. F. M. Wheeler, New York.

Blake Feed Pump, presented by the manufacturers.

6-inch New American Turbine, presented by Wm. Kennedy & Sons, Owen Sound, Ont.

Two Crown Water Meters, presented by the National Meter Co., New York, through Mr. M. Warnock, Toronto.

Rock Drill, presented by Sullivan Machinery Co., New York, through Mr. A. E. Blackwood, '95.

Marine Gasoline Engine, presented by Canadian Fairbanks Co., Montreal.

Two engines with different types of valve, presented by Messrs. E. Leonard & Sons, London, Ont.

Bundy trap from American Radiator Co., through Messrs. Russell & Gifford.

Dunham steam trap from C. A. Dunham Co.

Sectional models of valves from American Radiator Co.

Sectional model Mason Reducing Valve by Russell & Gifford.

Tanks, etc., by John Inglis Co. Pressure Fan from Sheldons Ltd., Galt.

In addition to the above, other firms have materially assisted by offering apparatus at or below cost price, among whom may be specially mentioned, The Canadian Rand Drill Co., Sherbrooke, Quebec.

PHYSICAL LABORATORIES.

The optical laboratory is equipped with Weinhold optical benches and accessories for determining the constants of mirrors and lenses and for demonstrating the construction and use of telescopes, field glasses, microscopes, etc. There is also a full equipment of optical instruments, including telescopes, microscopes, field glasses, comparators, spectrometers, level tester, photometers of various types, focometer, dynamometer, cathetometer, polariscope, projecting lanterns, etc.

The photographic laboratory is supplied with cameras for viewing, copying, enlargement and reduction, a spectroscopic camera and an electric blue printing machine and the necessary dark-rooms.

The hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balances, Jolly balance, Mohr's balance, hydrostatic press, vacuum pumps, gauges, etc.

The heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat, expansion apparatus, air thermometer, apparatus for verification of Boyle's law and pressure and boiling point curve, and for determination of the absolute expansion of mercury. Callendar's apparatus for determination of the mechanical equivalent of heat.

The acoustical laboratory is provided with sonometer, siren, forks ordinary and electric, Lissajous' and Melde's apparatus, organ pipes of various forms, manometric flame apparatus and a special equipment for work in architectural acoustics consisting of torsion chronograph, electropneumatic wind chest and standardized organ pipes and other accessories.

ELECTRICAL LABORATORIES.

Galvanometer laboratory.—The equipment of this laboratory is, in part, as follows: A set of D'Arsonval galvanometers conveniently located at tables about the laboratory, a set of resistance boxes for use with the same; measuring instruments, including ammeters, voltmeters, wattmeters, potentiometers and standard cells. Apparatus for the measurement of low resistance, including a ductor, and for high resistance, including a megger; several Carey Foster outfits and a Roller bond tester. There are also experimental lines for practice in locating faults, photometer outfits with rotating devices and various types of arc lamps.

Another room is fitted more especially for calibration of electrical instruments for alternating and direct currents. About one hundred and twenty portable measuring instruments are available for students' use, also standard instruments, including Weston laboratory standards, Kelvin balances and a Wolff potentiometer, with which the portable instruments may be compared.

Machine laboratory.—This laboratory, occupying two large rooms, contains twenty-five dynamos and motors varying in capacity from two to twenty kilowatts, adapted for experiments illustrating the properties of compound, shunt and series dynamos and motors, arc machines, as well as the use of interpoles. Switch-boards, numerous rheostats, lamp racks, starting boxes, circuit breakers, flexible cables, brakes, torsion dynamometers, tachometers, etc., are available for use with the machines.

This laboratory also contains two 15 kw., 25 cycle and two special 15 kw., 60 cycle General Electric polyphase revolving field alternators direct driven by motors, two 7½ kw. alternators, two rotary converters of 10 kw. and 5 kw. capacity, a 7½ kw. General Electric polyphase induction motor with slip ring rotor, Westinghouse three-phase squirrel cage induction motors, Wagner single phase motor and unity power factor motor, Swedish General Electric variable speed motor, Westinghouse single phase series motor, Westinghouse alternator, and several three phase and single phase induction motors; also transformers, reactive coils, and other details, as in the direct current sections of the laboratory described above, for experiments on the properties of alternating currents and alternating current apparatus in general. A constant-current transformer with its load of six series arc lamps, a three-element oscillograph, for studying wave forms, a high potential transformer and a mercury arc rectifier may also be mentioned. The students are supplied with Weston, Westinghouse and Thomson portable instruments for measuring purposes.

A motor generator set has been installed, comprising a 65 h.p. motor driving on the same shaft a 30 kw. 110 volt d.c. generator and a 30 kw. 60 cycle 110 volt alternator with direct connected enciter.

Magnetic laboratory.—A room is fitted with appliances for the study of saturation and hysteretic properties of samples of iron and steel, as well as a transformer for determining dielectric strength. The room also serves for exercise in winding models of armatures.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the Chemistry and Mining building, on the first and second floors. The rooms are large and well lighted, and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accommodation for 112 students, each working space being supplied with water, gas and fume cupboard. The laboratory for quantitative analysis will accommodate 48 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 36 is provided for the students engaged in the study of technical chemistry; it is equipped with appliances for the preparation and testing of chemical products. A laboratory for fourth year students with accommodation for eight workers has been fitted up. Each of these laboratories has its own balance room adjoining furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. A calorimeter room has been equipped in the basement. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

ELECTROCHEMICAL LABORATORIES.

The Electrochemical laboratories, which are situated in the Chemistry and Mining building, are provided with special facilities for electrolytic work, including a large storage battery and electroplating dynamo with tanks as well as a complete set of apparatus and electrical measuring instruments. The experimental work on electric furnaces is performed in two rooms specially equipped for this purpose with rheostats and switchboard connections to a 120 kw. d.c. generator which supplies the current required.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building. One has a floor space of 17 feet x 47 feet, and the other 28 feet x 37 feet. Adjoining each is a room 15 feet x 11 feet, with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances set on a concrete pier. Each of the laboratories contains a number of melting holes for crucible fusions, various gas furnaces both for crucibles and muffles, and two large brick muffle furnaces.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation room (19 feet x 13 feet) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

METALLURGICAL LABORATORY.

This laboratory is located on the basement floor of the Mining Building. The main room has a floor space of 1,600 square feet. The equipment consists of: Two copper blast furnaces, acid lined copper converter, an American Gas Company muffle roasting furnace, a Hoskins resistance furnace for high temperature work, an Abbey ball mill, tanks for electrolytic refining and precipitation, together with several small furnaces of various types. Facilities for testing coal, pyrometric work, flue gas analysis are also provided.

There is also a laboratory with a floor space of 900 square feet for the testing of clays. The equipment, part of which is in the main Metallurgical laboratory, consists of: A large revelation kiln, down draft gas fired kiln and muffle kiln, dry pressed brick press, tile and hollow ware press. There is a large ore and apparatus storeroom and locker room with shower bath for students.

MILLING AND CONCENTRATING LABORATORY.

A detached building, 72 feet x 70 feet in area, contains the milling and concentrating equipment. It is heated, lighted and supplied with power from the main building, and is divided into two parts. The greater part, with 72 feet x 53 feet floor space, and 22 feet high, contains the milling and concentrating equipment. The machinery for the former operations consists of a five-stamp battery erected on concrete foundations, Challenge ore feeder, amalgamating plates, Wilfley table, a clean-up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore. This is driven by a 15-horsepower motor.

The concentrating part consists of a set of five revolving trommels for wet screenings, four three-compartment jigs, a trough classifier delivering three products, and two revolving buddles, Wilfley Slimer, Deister Slimer, Richard's Pulsating Classifier, Richard's Pulsating Jig, a dry sizer, besides experimental apparatus of various kinds for experimenting on the falling rates of ore particles, the settling of slimes, surface tension action in grease and flotation methods, etc. The waste products run to the same settling tanks as the tailings from the stamp battery. The ore is handled by a travelling crawl. All the machinery in this part is driven by a 10-horsepower motor.

The lower floor has been fitted up for lixiviation work with apparatus for the treatment of sands and slimes, different types of filter press, vacuum plant agitators, etc.

The plant throughout is intended mainly for experimental purposes and is made of such a size that numerous experiments can be carried out on small quantities of ore. Tests can also be made on lots of one or two tons.

The other part of the milling building with 72 feet x 17 feet floor space and 15 feet high is divided into four separate rooms. The largest of the four rooms has an area of 476 square feet and is devoted to the crushing and pulverizing of the ores preparatory to their treatment in the milling and concentrating room. It is isolated in order to confine the dusty operations as far as possible to this one room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16 inches by 12 inches, platform scales for weighing ore, a jib crane, pulleys, buckets, etc., for handling the rock. An adjoining room contains a 30 h.p. motor for driving the machinery of the crushing department, and storage bins for ore, work bench, etc. Another room with 17 feet x 15 feet floor space is furnished with a magnetic separator of the Rowan-Wetherill type, driven by its own motor.

STRENGTH OF MATERIALS LABORATORY.

This laboratory is intended for the scientific and commercial testing of materials of construction such as iron, steel, timber, concrete and masonry.

It is supplied with the following:

An Emery 50-ton hydraulic machine, built by Wm. Sellers & Co., of Philadelphia, for making tests in tension and compression.

A 100-ton screw power machine, built by Riehle Bros., Philadelphia. It is designed for making tests in tension, compression, shearing and cross-breaking, and will take in posts 12 feet long and beams up to 18 feet in length.

A Riehle 10-ton screw power universal testing machine.

A Riehle 50-ton screw power universal testing machine.

A 15-ton single lever-machine, built by J. Buckton & Co., Leeds, England.

A torsion machine, built by Tinius Olsen & Co., Philadelphia, for testing the strength and elasticity of shafting. This machine will twist shafts up to 16 feet in length and 2 inches in diameter.

A hand power torsion machine of simple mechanical construction, specially designed for the testing of short shafts of a maximum diameter of one inch.

A Riehle transverse testing machine of 5,000 pounds capacity, adapted to specimens up to 48 inches in length.

A Riehle compressometer, with spherical seat attachment for the adjustment of specimens having slightly non-parallel faces. This compressometer will receive specimens up to 10 inches in length.

An Olsen compression micrometer of standard type.

A 20,000 pound Olsen, hand power, wire testing machine, specially fitted for testing wooden columns with both fixed and pivoted ends.

A Riehle abrasion cylinder, built to the standard required by the National Brickmakers' Association, adopted in 1901.

A Page Impact Machine for testing the toughness of road metals.

A diamond core-drill for preparing specimens for the Page impact machine.

A two-cylinder Deval abrasion machine for testing the wear-resisting properties of road materials.

A Berry strain-gauge for spans of 3 inches and 8 inches.

A Nalder dividing engine. This may be used either for the precise division of scales or for the calibration of instruments intended for refined measurements.

A large number of extensometers of the usual degree of precision. These include the Bauschinger, Martens, Unwin, Ames, Riehle, Johnson, Henning (recording) and other types. In addition there are the usual scales, micrometers, telescopes and reflectors, voltmeters for the determination of metallic contact, and such other appliances as are necessary in the making of precise measurements.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labour. It is also supplied with the necessary appliances for making ordinary repairs and for making apparatus for special experiment and original investigation.

CEMENT TESTING LABORATORY.

This laboratory is fitted with all the ordinary moulds, sieves, balances, burettes, steaming and drying tanks, tables, and other appliances necessary in making the usual physical tests of a Portland cement. It is also supplied with completely equipped cabinets for individual work. In addition there are the following:

A Riehle 2,000 lb. machine fitted for either tension or compression.

A 2,000 lb. Riehle shot machine for tension.

A 2,000 lb. Fairbanks shot machine for tension.

A 1,000 lb. Olsen automatic shot machine fitted for tests in either tension or cross breaking.

An Olsen soapstone moist closet of modern design.

METROLOGICAL LABORATORY.

The department of surveying and geodesy is provided with all the ordinary field instruments, such as transits, levels, compasses, micrometers, sextants, planimeters, plane tables, tapes, chains, etc., with which is carried on the instruction in practical field operations as detailed elsewhere.

A small laboratory is also established in the basement of the observatory described below, containing the necessary instruments for the refined measurements of geodetic surveying; as, a standard yard and metre, a Rogers 10-foot comparator, an invar base measuring apparatus, a Kater's pendulum with vacuum chamber, a level trier, micrometer microscopes, etc.

The geodetic observatory in connection with this department is used for the instruction of students of the Fourth Year in taking observations for time, latitude, longitude, and azimuth by the precise methods used in connection with a geodetic survey. It contains a 10-inch theodolite and zenith telescope by Troughton & Simms; an astronomical transit instrument and an 8-inch theodolite by Cooke; two electro-chronographs; a Howard astronomical clock; a Dent sidereal break-circuit chronometer; arithmometers, etc.

GEOLOGICAL AND MINERALOGICAL LABORATORIES.

In the Chemistry and Mining building on College Street the University possesses a modern laboratory for Geology and Mineralogy.

Courses are given in laboratory work, especially in personal examination of type sets of rocks, fossils, minerals and crystal models. These laboratory exercises serve to illustrate the introductory didactic instruction.

For the encouragement of pure crystallography the laboratories are supplied with goniometers of the various types, crystal models, appliances for the cutting of oriental crystal sections and for the physical examination of the same. Practical petrography is carried on in rooms provided with type sets of rocks, both macroscopic and microscopic. Advanced students are taught to make thin sections of rocks and fossils and to study them microscopically. For students in Mining a laboratory course in the interpretation of geological maps and sections is provided. Typical mining regions are studied in detail and an opportunity is afforded for the examination of specimens illustrating economic geology.

The laboratory for the preparation of thin sections of rocks, minerals and fossils is provided with electric diamond saws and grinding appliances for the various types of work incidental to the preparation of thin sections and museum material.

A room is also provided for advanced work in cartography and geological surveying.

The departments possess 28 petrological microscopes and 5 of other types, so that it is now possible to provide advanced students with instruments and sets of thin sections for their own especial use. The blowpipe laboratory contains 156 lockers, especially designed for apparatus for students.

MUSEUM.

The Geological and Mineralogical Museum of the University is open to students of the Faculty of Applied Science from 9 a.m. to 5 p.m. throughout the year.

The Museum is situated in the south-east corner of the ground floor of the Chemistry and Mining building.

The collections are restricted to such material as may serve to illustrate the courses of lectures given to undergraduate students in the Faculty of Applied Science. There are accordingly contained in this museum only the commoner rocks, minerals, fossils and ores.

LIBRARY.

Rooms have been set apart in the Engineering and the Chemistry and Mining buildings for the housing of such periodicals and other literature of the University Library as is of special interest to the students of this faculty.

SOCIETIES.

THE ENGINEERING SOCIETY OF THE UNIVERSITY OF TORONTO.

Officers for 1913-1914.

President	F. C. Mechin.
1st Vice-President	F. S. Rutherford.
Vice-Pres. Civil & Archl. Secs	R. E. Laidlaw.
“ Mechanical & Elec. Secs	K. A. Jefferson.
“ Chemistry & Mining Secs	L. T. Higgins.
Recording Secretary	L. L. Youell.
Corresponding Secretary	A. W. Sime.
Treasurer	W. G. Millar.
Permanent Secretary	J. E. Ritchie.
Curator	H. A. Babcock.
Fourth Year Representative	R. G. Matthews.
Third Year Representative	W. R. McGie.
Second Year Representative	H. B. Little.
First Year Representative	A. A. Tufford.
Senior “ Varsity” Representative.	J. G. Mullins.
Junior “ “	J. F. Young.

The Society meets every second Wednesday during the academic year. Papers are read, and discussions are held on engineering subjects. The Society publishes a journal monthly during the year, containing the best papers read at the meetings. A supply department is conducted by the Society, on a co-operative plan, through which instruments, drafting supplies, stationery, etc., may be purchased at a low cost.

UNIVERSITY OF TORONTO ELECTRICAL CLUB, 1913-1914.

President	A. S. Robertson.
Vice-President	E. M. Monteith.
Secretary-Treasurer	E. D. W. Courtice.
Councillors	J. D. Peart. A. G. Ironside. W. R. McGie.

The Society meets every second Thursday evening during the academic year for the discussion of papers relating to mechanical and electrical engineering problems too technical for consideration in the Engineering Society. The membership is limited to members of the senior and final years.

THE INDUSTRIAL CHEMICAL CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers for 1913-1914.

Honorary President	Dr. Ellis.
Honorary Vice-President	Prof. J. W. Bain.
President	W. E. Phillips.
Vice-President	W. Uffelmann.
Curator	J. McLean.
Secretary-Treasurer	C. C. Anderson.
Fourth Year Representative	O. G. Lye.
Third Year Representative	L. G. Glass.

The Industrial Chemical Club was organized in 1909 and consists of graduates and undergraduates of Departments 5 and 6. Its object is to promote the study of industrial chemistry and chemical engineering. Illustrated lectures preceded by an informal dinner and short musical program, are held fortnightly, and on the following day an excursion is made to one or other of the industrial chemical concerns located in the city or vicinity.

UNIVERSITY OF TORONTO ARCHITECTURAL CLUB, 1913-1914.

Honorary President	John M. Lyle.
President	W. C. Skinner.
Vice-President	J. M. Robertson.
Secretary	F. Marani.
Treasurer	M. Denison.
Councillors	H. J. Burden. F. A. Swinnerton. F. R. Gibson.

ATHLETIC ASSOCIATION OF THE FACULTY OF APPLIED SCIENCE.

EXECUTIVE COMMITTEE, 1913-1914.

Honorary President	Prof. C.H.C.Wright.
President	E. B. O'Connor.
Vice-President	D. B. Gardner.
Secretary-Treasurer	C. W. Pennington.
Fourth Year Representative	H. W. Wagner.
Third Year Representative	L. S Adlard.
Second Year Representative	R. W. Downey.
First Year Representative	G. A. Webb.

The Athletic Association has full control over all athletic clubs using the name of the Faculty of Applied Science. The Executive Committee has power to suspend any one from the privileges of membership in the Association for any breach of its regulations, and controls the finances of all athletic clubs in the aforesaid Faculty. The annual membership fee of this Association is fifty cents.

No other moneys are collected for the support of athletics in the Faculty of Applied Science without the sanction of the Executive Committee.

RUGBY FOOTBALL.

The Mulock Cup, which was presented by Sir Wm. Mulock, M.A., LL.D., to the University of Toronto Rugby Football Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

RUGBY FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers for 1913-1914.

Honorary President	T. R. Loudon.
President	I. R. Strome.
Manager senior team	J. P. Cavers.
Captain senior team	H. W. Wagner.
Manager junior team	W. W. Ritchie.
Captain junior team	C. Smythe.

ASSOCIATION FOOTBALL.

In order to encourage Association Football on the College campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

(Winners of Faculty Cup.)

Officers for 1913-1914.

Honorary President	C. H. C. Wright.
President	E. B. O'Connor.
Manager	E. L. Bedard.
Captain	V. R. Pfrimmer.

HOCKEY.

The trophy which is competed for annually among the Colleges in hockey is known as the Jennings Cup, and is the gift of the late W. T. Jennings, Mem. Inst. C.E.

HOCKEY CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers for 1913-1914.

Honorary President	C. R. Young.
President	E. B. O'Connor.
Manager senior team	W. G. Millar.
Manager junior team	H. C. Rose.
Captain senior team	L. T. Hayman.
Captain junior team	V. R. Pfrimmer.

TRACK CLUB.

Officers for 1913-1914.

Honorary President	Prof. L. B. Stewart.
President	C. V. Perry.
Secretary-Treasurer	R. W. Downie.

OFFICERS OF THE 2nd FIELD COMPANY CANADIAN ENGINEERS.

Officer Commanding	Major S. P. Biggs.
Captain	T. C. Irving.
Lieutenant (Acting Adj.)	S. H. Fellowes.
Lieutenant	G. M. Bramfitt.
Lieutenant	E. Peplar.
Medical Officer	J. W. Barton, M.D.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION.

Directorate.

Honorary President	R. A. Falconer, D.Litt., LL.D.
President	Prof. C. H. C. Wright.
Vice-President	J. C. Maynard.
Secretary-Treasurer	Dr. J. Barton.

Directors.

J. Maynard.
Dr. W. B. Hendry.
W. Laird.
Prof. G. I. H. Lloyd.
V. Stock.
I. R. Strome.
A. E. Cuzner.

The Athletic Association is now the paramount body in University athletics and has entire jurisdiction over the athletic clubs using the University name, and over their finances, members and policy, subject to the University authorities. Henceforth no financial agreement can be entered into by any such club without the sanction of the Directorate. No expenditure of any kind in connection with any such club can be made without the written order of the Secretary-Treasurer of the Directorate.

BASKETBALL CLUB.

Season 1913-1914.

Honorary President	Prof. J. McGowan.
President	E. A. Twidale.
Manager of Seniors	W. C. Skinner.
Manager of Juniors	C. K. Hoag.

THE STRUCTURAL CLUB OF THE UNIVERSITY OF TORONTO ENGINEERING SOCIETY.

Honorary President	Prof. C. R. Young, B.A.Sc.
President	C. A. Meadows.
Vice-President	H. M. Smith.
Secretary-Treasurer	F. W. Douglas.
Official Photographer	H. P. Wilson.

The Structural Club was organized in November, 1913. The membership is composed of Fourth Year Civil Engineering students taking the Structural Engineering option. The object of the Club is to study the broader aspects of Structural Engineering. Meetings are held semimonthly, which are addressed by prominent engineers. The addresses are invariably followed by lively and instructive discussions. Another phase of the Club's activity is the conducting of trips of inspection to engineering works in the city.

FACULTY OF APPLIED SCIENCE.
YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Y.M.C.A. of the Faculty of Applied Science was organized January 27th, 1905, and forms an integral part of the University of Toronto Y. M. C. A., which is a Federation of the associations of the various Colleges and Faculties of the University. The object of the Association is to develop a true Christian manhood and to help the students in whatever way possible.

Honorary President	Prof. J. W. Bain, B.A.Sc.
President	S. Shupe.
Treasurer	Porter.
Recording Secretary	W. A. Smelser.

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the University, at a cost of from four dollars and a half a week upwards for comfortable lodging with board; or rooms may be rented at a cost from one dollar and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

UNIVERSITY RESIDENCES.

By the generosity of Mr. and Mrs. E. C. Whitney and other friends, the University can now offer to some hundred and fifty men the peculiar advantages of residential life and excellent accommodation within its own grounds. The Residence, opened in November, 1908, consists of three Houses situated on the north side of Hoskin Avenue, opening upon a quadrangle, the fourth side of which is formed by Devonshire Place. They stand about two hundred yards to the north of University College and of the University Dining Hall and close to the University Gymnasium and Athletic Field. The buildings are known as the South, East and North Houses.

Each House contains twenty-four single rooms, one single suite, one double room and eleven suites, a suite comprising a study and two bedrooms. A large room in each building, with an open hearth and a library has been set aside as a common room. A lavatory with hot and cold shower baths is provided for every eight men. The buildings are heated by steam and lighted by electricity.

The University supplies the table, chairs, book-case, chiffonier, bed, mattress, pillows, linen and window shades for each room; it is prepared to furnish a drop-light for a nominal rental.

Each occupant is charged $2.50 room-rent per week, payable to the Bursar four weeks in advance. The charge for each single suite is $3.50 per week. These charges cover heat, light, house-service, house-laundry, and the use of the telephone. There is no separate dining hall connected with the Residence, but board may be obtained at the adjacent University Dining Hall for $3.25 per week.

Applications for rooms must be made in writing to the Secretary of the Residence Committee (address the Registrar's Office) and must be accompanied by a deposit of $5.00. This deposit will be returned if the application be not granted, and will be forfeited if a room is assigned to the applicant and not taken by him, unless notice of his refusal of the room be received by the Secretary in writing before September 8th. It will be returned in full at the end of the College year if the room key be given back and the room and furniture left in a satisfactory condition. The following principles govern the allotment of rooms: (i) No student who, as a result of the annual spring examinations is not assured of being able to proceed to the subsequent year, will be admitted into the Residence. (ii) The rooms in each House will be distributed proportionately between the various Faculties and Years. (iii) Rooms will be reserved for members of the incoming First Year until September 18th. (iv) Applications will be considered in order of priority.

The University lays down three general rules, designed to prevent hazing, the use of intoxicants and gambling. The students in each House shall elect a House Committee, which is entrusted by the University with the making and enforcing of any other needed rules and with the maintenance of order. A member of the Faculty resides in each House to act as friend and adviser to the men in residence.

STUDENTS IN ATTENDANCE.

SESSION 1913-1914.

First Year.

1 Aggett, W. H..........Toronto.
7 Andrew, W. B........Chatham.
1 Attwood, W. S........Hamilton.
1 Ball, O. V.............Toronto.
7 Ballinger, J. G......Streetsville.
4*Banigan, J............Toronto.
7 Barbour, R. A.........London.
7*Bauer, W. R..........Waterloo.
3 Bell, E...............Seaforth.
6 Belton, J. R...Fredericton, N.B.
1*Berry, A. E..........Berryland.
3 Bingham, S. B.................
1 Bishop, C. A ....Toronto.
3 Bishop, J. M..........Toronto.
1 Bishop, W. A......Owen Sound.
3 Booth, G. E...........Toronto.
1 Bothwell, R. S. C.......Toronto.
3 Breckenridge, B. E....Hamilton.
1 Brooks, W. J..........Toronto.
7 Bryans, F. M..........Toronto.
7*Bumstead, S. W...Owen Sound.
1 Burn, G. A. H.......Janetville.
7 Burton, C. E..........Kirkton.
7 Burwash, N......New Liskeard.
7 Byres, E. S...........Chatham.
1*Carmichael, A. H......Toronto.
7 Catherwood, C. R..Owen Sound.
1*Chamberlain, K. H.....Ottawa.
1 Christie, F. C.....Yorkton, Sask.
7 Colleran, J. C......Port Arthur.
1 Coon, H. F...........Hamilton.
1 Corman, E. H........Hamilton.
7 Creamer, P. S....Dawson, Y.T.
1 Crysler, R. A..........Toronto.
1 Dafoe, E. R..........Napanee.
1 Dale, W. P.........Brampton.
1 Darch, F. C...........London.
5 Dickson, J. V..........Toronto.
3*Dobbin, H. O.........Waterloo.
1 Dowling, H. L.........Toronto.
7 Durbrow, P.A........Carswell.
1*Dustan, E. B.......Pictou, N.S.
1 Eardley-Wilmot, F. L.
Westward Ho! Devon, Eng.
7 Eyre, R. T............Toronto.
7 Ferrier, D. W..........Toronto.
3*Firstbrook, J. H........Toronto.
1 Firstbrook, W. G......Toronto.
1 Fraser, J. A.........Ballymote.
2*Gilley, E. R.
New Westminster, B.C.
1*Gilley, J. R.
New Westminster, B.C.
4 Gibson, F. R..........Toronto.
1 Glover, T. S...........Toronto.
1 Graham, D. S.......Inglewood.
7 Gram, J. I ....Weston.
4*Haldenby, E. W.......Toronto.
7*Hanly, A. F..........Almonte.
3 Harris, A. B...........Toronto.
7 Harrop, C. E...........Garnet.
1*Hawkey, R. R........Grimsby.
3 Henderson, M. G.........Tara.
7 Hewson, C.........Port Hope.
1 Holland, U. C.........London.
6 Honeywell, W. B.......Tyrone.
2 Howes, E. A.........Harriston.
7*Huestis, R. D..........Toronto.
1 Hughes, C. A....Mimico Beach.
4 Hume, A. G...........Toronto.
1 Hunter, W. H.........Toronto.
1 Hurlbutt, R. W.......Mitchell.
7 Hutcheson, G. F.....Huntsville.
3 Ives, V. E............Colborne.
1 Jamieson, K. W.........Berlin.
1 Johnston, E. W.......Harriston.
1 Jones, R. E........Meyersburg
1 Kay, W. R............Toronto.
6 Knight, A. G..........Toronto.
5 Lawson, O. G..........London.
1*LeClair, W. J .... Ottawa
1 Legate, H. J.......Owen Sound.
1 Longworthy, H. L..Regina, Sask.
1*Macdonald, J. A.......Toronto.

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* Non-matriculated.

7*Mackenzie, A. B.......Toronto.
7 Maclaren, H. J........Brockville.
5*Maclean, A. P.........Toronto.
1 Manning, R. C.......Hamilton.
1 Manzer, R...Medicine Hat, Alta.
4 Mathers, A. S.........Chesley.
7 Mayberry, F. C.......Stratford.
3 McCandlish, S. G.....Hamilton.
2 McClelland, H. L....Cooksville.
1*McClintock, G. A.,
Pt. Fortune, Que
1 McEwen, G. A....Regina, Sask.
3 McIlhargey, P. E......Stratford.
7*McKinley, F. A.......Wyoming.
1 McLean, J. R.......Palmerston.
1*McMaster, W. S.......Toronto.
1*Mitchell, F. L...St. Kitts, B.W.I.
1*Moorhouse, E. L.,
Medicine Hat, Alta.
7 Morgan, D. M......Streetsville.
7 Nichol, W. J.........Dunnville.
1 Nicholson, H. R......Hamilton.
1 Nixon, W. H..........Toronto.
1*Norris, A. F...........Toronto.
7 Offerhaus, W. A. R.,
Armstrong, B.C.
1*Parr, H. A....... Calgary, Alta.
1*Pearson, G. P.......Schomburg.
1*Pool, C. L....Newport News, Va.
1 Proctor, W. D..........Sarnia.
1 Purchas, C. M. G.,
Morant Bay, Jamaica, B.W.I.
7 Ratz, R. D............Elmira.
2 Richardson, C.A..Cleveland, O.
1 Ryan, T. L. J......Brantford.
7 Secord, W. F....Port Robinson.
7 Scott, T. A.........Walkerton.
2 Sharman, J. E.......Oak Lake.
1 Shoebottom, L. R......London.
3 Sinclair, G. R.......Belleville.
1 Sinclair, I M. R........Toronto.
3 Snider, M. A..........Waterloo.
1*Sohn, G. H....Indianapolis, Ind.
1 Stevenson, C. W. G.....Guelph.
1 Stephenson, G. E..Hills Green.
7*Sutherland, W. F. B....Toronto.
1*Taylor, R. E.....So. Woodslee.
1 Thompson, B.......Port Hope.
4 Thompson, C. C.......Toronto.
1 Thomson, A. P. J......Toronto.
1 Tilston, C. E..........Toronto.
3 Tyndale, C. E......Chatsworth.
7 Titus, O. W........Gore Bay.
7 Tufford, A. A.........Hamilton.
7 Tuttle, H. A.....Niagara Falls.
5 Tyrrell, E. J...........Toronto.
3 Vaughan, O. D........Toronto.
1 Waddle, F. M........Brantford.
1 Wait, G. E............Ottawa.
7 Wallace, J. S. M..........Galt.
7 Ward, J. W.........Waterford.
1*Warwick, R. S.........Brussels.
4 Watson, H. R.........Toronto
1*Webb, G. A...........Toronto.
7 Webb, I. W...........Toronto.
1 Whately, G. A.......Thornbury.
1 Willmott, L. E.........Toronto.
1 Wood, G...........Kincardine.

Second Year.

1 Allan, E. B............Toronto.
6 Anderson, C. C........Windsor.
7 Armstrong, R. K.......Oakville.
1 Armstrong, T. E.,
Kleczkowski, Sask.
7 Babcock, H. A.........Toronto.
7 Ball, F. C. W..........London.
1 Barnes, L. F.........Hamilton.
7 Booth, F. W...........Toronto.
6 Boyd, D...............Toronto.
5 Birrell, W. G.........Pinkerton.
3 Breuls, H. E...........Toronto.
1 Brown, R. R.....Nelson, B.C.
1 Brown, H. R..................
5 Brown, N. B..........Toronto.
1 Cannon, F. J..........Toronto.
7 Chapman, J R...........Galt.
7 Cheney, S. K.....Vankleek Hill.
1 Crosby, E............Toronto
7 Cross, R. A..........Hamilton.
7 Cumming, K. N........Eberts.
3 Cunningham, J. N.,
Moose Jaw, Sask.
7 Cunningham, L. L.,
Carlyle, Sask.
1 Dale, R. S.............London.
7 Dandeno, L. G........Hespeler.
7 Daniel, T. A..........Ingersoll.
1 Dashwood, G. R.......Midland.
3 Delisle, L.....Chicoutimi, Que.
1 Doherty, C. A.........Durham.
1 Downie, R. W...Melita, Man.
1 Eastwood, J H.......Peterboro.
1 Edmonds, C. W........Simcoe.
7 Fallis, M. P...........Cadmus.
7 Flegg, R. L.......Smiths Falls.

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* Non-matriculated.

7 Fleming, A............Toronto.
7 Fraser, R. A.......Georgetown.
1 Gaboury, L. F.........Toronto.
1 Gage, C. E...........Hamilton.
1 Gardner, D. B........Toronto.
7 Grasett, H. A. M.......Barrie.
1 Greatrex, W. K.......Toronto.
7 Gurnett, E. G...Owen Sound.
1 Hagarty, D. G.........Toronto.
1 Hagedorn, G. C.........Berlin.
2 Hanmer, G...........Toronto..
2 Hare, R. M...........Toronto.
1 Harron, L. W.........Toronto.
1 Hoag, C. K........Woodstock.
4 Hoidge, R. T. C.......Toronto.
7 Hubbert, S. J..........Toronto.
1 Hughes, B. H., St. Merryn, Eng.
8 Hugill, O. H...Sault Ste. Marie.
4 Husband, L..........Hamilton.
1 Ingersoll, L. H.....Woodstock.
1 Jackson, K. B.........Toronto.
7 Johnston, M..........Clayton.
3 Keefer, M. W.........Toronto.
7 Kelleher, J............Toronto.
4 Kidd, W. S.....Burretts Rapids.
7 King, G. F.............Simcoe.
1 Kirby, J. R............Toronto.
1 Kerby, R. W..........Toronto.
3 Kirn, R. W.........Peterboro.
7 Klingensmith, C. R....Toronto.
6 Krug, S. J ....Chesley.
1 Lee, L. A. C...........Toronto.
7 Levesque, L...Chicoutimi, Que.
7 Little, H. B...........London.
2 Macdonald, C. E......Toronto.
3 Macdonald, R. A.....Stratford.
2 Macpherson, C. K....Goderich.
7 Manning, T. R.........Toronto.
1 Margison, O......Victoria, B.C.
4 Marani, G. H.........Toronto.
1 Matthews, F. J........London.
2 McCrodan, B. A.....Belleville.
1 McGinn, F............Toronto.
4 McLellan, T. W......Harriston.
1 McPherson, F. T., Saskatoon, Sask.
1 Mendizabal, A. R., Oruro, Bolivia, S.A.
3 Merry, F. S........Stratford.
1 Mitchell, W. B.........London.
3 Newcombe, J. C.......Toronto.
2 Norton, F. W.....Evanston, Ill.
1 Norwich, H. B.........Toronto.
7 Nott, G. E............London.
1 O'Callaghan, E. A.....Cornwall.
6 Oliver, C. E.....East Delta, B.C.
6 O'Reilly, W. H........Toronto.
3 Ormsby, J. A. N.......Toronto
7 Panter, J. S.........Belleville
7 Park, R. T...........Peterboro.
7 Paterson, W. B...........Arva.
1 Pfrimmer, V. R.......Stratford.
1 Pringle, J. E.........Hamilton.
3 Pym, A. F..............Essex.
7 Reed, H..............Toronto.
1 Ritchie, W. W.........Toronto
1 Rose, H. C.............Guelph.
1 Ross, S. R............Toronto.
3 Russell, J. P...........Toronto.
4 Schwartz, G. B........Toronto.
1 Scott, W. B...........Toronto.
1 Seaborne, R. L...La Tuque, Que.
1 Sievewright, R. L.....Windsor.
7 Skinner, J. L..........Toronto.
7 Smelser, W. A........Hamilton.
1 Smith, E. E...Sault Ste. Marie.
1 Smith, H. S...Saskatoon, Sask.
1 Smithson, E. W.........London
1 Smythe, C............Toronto.
1 Snow, G. B............Toronto.
1 Speirs, R. M...........Toronto.
1 Stark, W. H...........Toronto.
4 Stevens, P. L..........Toronto.
1 Storms, F. S...........Toronto.
1 Stratford, G. S.....Brantford.
1 Sureda, J. A...........Toronto.
4 Swinnerton, F. A. R. W., Toronto.
1 Taylor, M. S.....Regina, Sask.
7 Thomas, A. M.........Toronto.
7 Tobin, K. E.......Woodstock.
1 Tremayne, J. E...Sutton West.
7 Tudhope, R..........Norwood.
4 Tyrewhitt, R..........Toronto.
2 Wallace, H. D.........Toronto.
5 Ward, F. W...........Toronto.
1 Ward, R. C...........Toronto
3 Washington, H. A......Toronto.
4 Waters, D. M........Belleville.
3 Watson, J. M.......Woodstock.
7 Wells, A. R.............Blyth.
7 Weppler, H. S.........Hanover.
1 Whaley, A. B..........Toronto.
1 Wheelock, C. H....Orangeville.
7 Widdicombe, A. E., St. Catharines.
1 Williams, R. E.........Toronto.
1 Wilson, F. C........Kerrwood.
7 Wilson, J. S............Kenora.
7 Wilson, R. H........Markham.
4 Wilson, W. S..........Hanover.
3 Youell, L. L............Aylmer.
2 Young, J. F.......North Bay.

Third Year.

1 Adlard, L. S. .... Toronto.
2 Allan, W. N. ...... Nelson, B.C.
1 Anderson, A. C. .... Toronto.
1 Arksey, G. A. .... Toronto.
2 Arthur, R. M. .... Sudbury.
1 Austin, F. D. .... Peterboro.
7 Ball, W. V. .... Toronto.
7 Banbury, T. R. .... Ingersoll.
7 Beacock, V. A. .... Toronto.
1 Bennett P. ...... Calgary, Alta.
1 Beswick, R. C. ...... Uxbridge.
7 Birrell, A. L. .... Toronto.
1 Black, A. P. .... Toronto
1 Blackstock, G. G. ...... Toronto.
7 Bonus, W. H. .... Peterboro.
6 Breithaupt, J. E. .... Berlin.
1 Brouse, E. D. .... Toronto
1 Brown, L. R. .... Toronto.
1 Buchanan, F. M. .... Blenheim.
7 Budd, H. C. .... Palmyra.
4 Burness, K. C. .... Toronto.
4 Burden, H. J. .... Toronto.
2 Campbell, P. G. C. .... Peterboro.
2 Carmichael, F. N. D. ... Toronto.
7 Carswell, J. M. .... Toronto
4 Catto, R. W. .... Toronto.
7 Cavers, J. P. ...... Milford Bay.
7 Chandler, F. H. .... Stratford.
1 Cockburn, R. M. ...... Toronto.
7 Code, W. W. .... Toronto.
1 Cook, J. D. .... Toronto.
1 Cotton, C. P. .... Toronto.
1 Crealock, A. B. .... Toronto.
1 DaCosta, W. R. C. .... Toronto.
1 Daniel, N. H. ...... Port Hope.
3 Davey, C. G. .... London.
4 Davidson, J. J. .... Toronto.
7 Davidson, G. P. .... Toronto.
7 Dean, W. A. .... Toronto.
1 Deverall, E. V. .... Toronto.
4 Denison, M. .... Toronto.
7 Dibblee, J. .... Toronto.
1 Dickson, W. L. .... Toronto.
7 Dobbin, C. W. .... Waterloo.
1 Downey, G. A. .... Orillia.
4 Edwards, G. R. .... Toronto.
7 Elliot, R. V. .... Norwich.
2 Emmerson, E. R. .. Port Arthur.
1 Evans, A. C. .... Oakville.
1 Falconer, H. S. ...... Shelburne.
1 Ford, J. W. H. .... London.
1 Fraser, W. R. .... Brantford.
1 French, W. G. .... Toronto.
1 Fulton, W. J. .... Toronto.
1 Galbraith, R. D. .... Toronto.

1 Geale, C. N. .... Peterboro.
6 Glass, L. G. .... London.
2 Glazier, M. B. .... Brockville.
1 Gooderham, G. A. ..... Toronto.
7 Gould, W. H. R. .... Uxbridge.
4 Graham, T. S. .... Toronto.
1 Grange, E. R. .... Toronto.
1 Gray, E. D. .... Vancouver, B.C.
3 Gray, J. .... Victoria, B.C.
1 Gray, G. S. .... Meaford.
7 Griffiths, G. E. .... Thorold.
1 Gurofsky, M. .... Toronto.
2 Haas, M. S. .... Toronto.
2 Hall, W. T. .... Toronto
2 Hanlon, J. E. .... Arkell.
1 Harris, R. W. .... Cobourg.
1 Hastings, C. E. .... Toronto.
1 Hayward, C. .... Toronto.
4 Heaton, H. A. .... Toronto
2 Higgins, L. T. .... Toronto
1 Hogarth, C. E. .... Hamilton.
7 Hopkins, H. R. .... Burlington.
7 Ireland, T. P. .... Hamilton.
7 Ironside, G. .... London.
1 Jackson, C. W. H. ... Coboconk.
7 Jefferson, K. A. .... Arcola, Sask.
1 Johnston, G. W. F., Lethbridge, Alta.
7 Jones, C. M. .... Toronto.
2 Jones, R. D. .... Toronto.
1 Jupp, E. H. .... Orillia.
7 Karn, H. C. ...... Woodstock.
7 Keys, C. R. ...... Newark, N.J.
5 Kohl, H. .... Toronto
1 Laidlaw, R. E. .... Durham.
1 Lamb, G J .... Walkerton.
7 Lawrence, G. W. .. Pt. Dalhousie.
3 Lloyd, R. H. .... Wingham.
1 Lockhart, W. E. .... Newcastle.
1 Longworthy, W. E., Regina, Sask.
1 Lount, C. T ... Regina, Sask.
1 Lye, R. G. .... Toronto.
2 Macdonell, I. M. ...... Toronto.
1 Macpherson, H. E. .. St. Thomas.
1 Magann, G. L. .... Toronto.
7 Martin, E. T. . Waddington, N.Y.
3 Mason, F. H. ...... Uxbridge.
1 McCaffrey, W. R. ...... Toronto.
1 McCort, C. R. ... Port Arthur.
1 McDonald, J. P. .... Brantford.
1 McDonald, K. D., Vancouver, B.C.
3 McGie, W. R. ...... Belleville.
1 McGugan, D. F. .. Mt. Brydges.

1 McKague, E. V........Toronto.
1 Meitz, W. H.......Pembroke.
3 Meyer, W. R.,
Redwood City, Cal., U.S.A.
2 Mills, F. L............Toronto.
1 Mitchell, G.........Hamilton.
1 Mogan, J. T...........Toronto.
7 Monteith, E. M........Toronto.
4 Morris, A.............Toronto.
1 Morris, B. M.......Pembroke.
5 Morris, W............Warwick.
2 Muir, J. M...........Toronto.
1 Murphy, D. E.,
New Westminster, B.C.
1 Neilson, M. A.........Toronto.
1 Nicklin, H. S...........Acton.
1 O'Connor, E. B........Toronto.
3 Payne, A. N...........Toronto.
1 Pearce, P. L......Yorkton, Sask.
1 Peck, H. M.............Barrie.
1 Peterkin, S. M.........Toronto.
1 Porter, C. F..........Windsor.
1 Porter, J. E.........Wingham.
3 Purdy, W. F. P....Wardsville.
1 Raley, W. E.........Lethbridge.
6 Ramsay, H........Owen Sound.
1 Rance, C. C...........Toronto.
1 Rankin, G.........North Bay.
1 Redman, W. B....Birch Cliff.
3 Reid, F. G...........Belleville.
1 Richardson, A. A.....Peterboro.
7 Richmond, J.....Smiths' Falls.
3 Robertson, A. S.....Walkerton.
1 Rose, J. T.............Toronto.
7 Ross, A. C............Toronto.
2 Ross, J................Toronto.
1 Rowe, H. M..........Norwich.
7 Russell, W. E.....Waubaushene.
4 Rutter, G. W.......Birch Cliff.
7 Ryan, W. M......Owen Sound.
7 Savage, E. W...........Navan.
7 Scott, A. G.......Smiths Falls.
1 Scott, E. H............Toronto.
1 Scott, R. G............Toronto.
7 Seymour, N. F..........Essex.
1 Shaw, J. H............Toronto.
1 Sheehy, J. S........Peterboro.
3 Shier, W. G...Vancouver, B.C.
1 Simpson, C. N.........Toronto.
3 Smith, C. A......Worthington.
3 Smyth, A. H.........Strathroy.
7 Steel, W. A.........Belleville.
1 Steven, R. A...........Toronto.
2 Stitt, J. B.........Haileybury.
3 Stone, J. D...........Chatham.
1 Storms, D. H.........Hamilton.
2 Stroud, J. E. C.,
Bridgetown, Barbados, B.W.I.
7 Suhler, A. N.......Pt. Edward.
7 Taylor, A. N.......Winchelsea.
3 Taylor, H. C.....Victoria, B.C.
3 Tillson, G. D......Tillsonburg.
1 Tillson, L. B.......Bracebridge.
1 Tom, J. A............Goderich.
5 Uffelmann, W.......Waterloo.
1 Vance, J. A......New Hamburg.
1 Vezina, L. P..Chicoutimi, Que.
7 Ward, A. L.......Niagara Falls.
5 Watson, L. T.......Woodstock.
1 Weir, F. E............Burford.
1 West, C. W.....Campbellford.
2 Wilcock, W. S......Flesherton.
1 Williams, J. N......Burlington.
1 Wilson, J. C.........Wingham.
1 Wood, H. A...........Toronto.

Fourth Year.

1 Abendana, E. M.,
Port Antonio, Jamaica, B.W.I.
1 Adsett, F. C.......North Bay.
1 Alton, J. L...........Lucknow.
2 Andrews, F. C........Hamilton.
7 Armer, C. E...........Toronto.
2 Banks, H. R...........Toronto.
1 Bedard, E. L........Courtright.
1 Bedard, H. J......Courtright.
1 Belcher, J. T..........Toronto.
1 Bennett, S. G..........Toronto.
1 Binns, P. V...........Toronto.
1 Blyth, J. M...........Orchard.
5 Bonham, A. R.........Toronto.
1 Bower, J. H. W........Toronto.
3 Brown, H. H......Port Hope.
7 Brown, W. D.....Owen Sound.
1 Campbell, D. H........Rodney.
7 Campbell, H. A........Toronto.
3 Campbell, H. M..St. Catherines.
1 Campbell, J. J............Galt.
6 Candee, C. N..........Toronto.
2 Carlyle, R. T..........Toronto.
2 Carter, J. M...........Toronto.
2 Chambers, E. V....Woodstock.
1 Christie, R. M.,
Edmonton, Alta.
3 Clipsham, K. M.......Toronto.
7 Corbould, C. E. B.,
New Westminster, B.C.
1 Crashley, J. W.........Toronto.
3 Courtice, E. D. W....Clinton.

7	Crawford, A. W.	Sarnia.
1	Cuthbertson, W.	Perth.
1	Dalton, G. F.	Toronto.
1	Dashwood, R.	Midland.
1	Davidson, R. D.	Alliston.
3	Delamere, R. D.	Toronto.
1	Douglas, F. W.	Toronto.
7	Edwards, H. C.	Toronto.
3	Elliott, H. F.	Norwood.
1	Elliott, J. A.	Nelson, B.C.
2	Ellis, S. D.	Victoria, B.C.
1	Eyres, H. E.	Calgary, Alta.
1	Falls, O. M.	Toronto.
7	Ferguson, D. G.	St. Thomas.
1	Fleming, G. O.	Toronto.
2	Fleming, J. S.	Cobalt.
1	Foreman, J. L.	Collingwood.
7	Franklin, H. J.	Toronto.
5	Frost, J. G. G.	Tweed.
1	Fuller, C. H. R.	Toronto.
7	Gill, E. I.	Victoria Harbour.
2	Gill, J. R.	Sudbury.
1	Gouinlock, R. W.	Toronto.
7	Grierson, C. I.,	Strathcona, Alta.
2	Halford, D. S.	Toronto.
3	Hall, W. H.	Peterboro.
3	Hally, G. H.	Toronto.
1	Hanna, J. J.	Calgary, Alta.
1	Hawes, J. H.	Orangeville.
1	Hayman, L. T.	London.
1	Hogarth, B. B.	Brandon, Man.
4	Hugli, E. E. H.	Golden Lake.
1	Hustwitt, S. A.	Toronto.
2	Hutchings, W.	Toronto.
7	Jannati, A. S.	Bombay, India.
1	Johnson, R. P.	Toronto.
7	Kamman, J. I.	Rochester, N.Y.
1	Kay, J.	Toronto.
4	Keefer, N. G.	Toronto.
3	Kerby, H. S.	Calgary, Alta.
3	Kerr, J. A.	Peterboro.
7	Kewin, G. E.	Toronto
1	Knight, J. A.	Bala.
2	Lang, S. A.	Toronto.
7	Latimer, C. W.	Penticton, B.C.
1	Lindsay, R. E.	Bolton.
7	Lorimer N. H.	Toronto.
5	Lye, O .G.	Toronto
2	Macdonald, W. A.	Cobalt.
3	MacKendrick, B.	Galt.
7	Mackenzie, A. M.	Guelph.
2	Mackenzie, H. J.	Woodstock.
1	MacLachlan, W. A.	Guelph.
1	Macpherson, H. N.,	Regina, Sask.
3	MacQuarrie, A. H.	Valetta.
7	Marshall, J. A.	Ryckmans.
1	Marshall, J. A. P.	London.
7	Matthews, R. G.	Brantford.
3	Maxwell, H. W.	St. Marys.
1	McDonald, R. C.	Ripley.
1	McGarry, P. J.	Merritton.
1	McGill, S. B.	Toronto.
7	McLaren, D. L.	Perth.
3	McQueen, P. H.	Toronto.
1	Meadows, C. A.	Toronto.
2	Meahan, P. W.,	Bathurst Village, N.B.
1	Mechin, F. C.	Brougham.
1	Millar, W. G.	Toronto.
1	Miller, A. S.	Brighton.
6	Milligan, W. E.	Toronto.
7	Mills, P. H.	Toronto.
1	Mitchell, J. S.	Lucknow.
1	Montague, J. R.	Niagara Falls.
6	Morrison, D.	Bowmanville.
1	Mullins, G. J.	Toronto.
1	Muntz, E. P.	Toronto.
7	Nicholson, C. L.	Toronto.
1	Nicholson, J. B.	Hamilton.
1	Noecker, C.	Waterloo.
1	Owens, J. A.	Toronto.
1	Parker, A. H.	Toronto.
1	Patterson, R. G.	St. Marys.
7	Peart, J. D.	Freeman.
1	Pennington, C. W.	Dundas.
1	Perry, C. V.	Toronto.
5	Philips, W. E.	Toronto.
7	Philp, G. O.	Port Hope.
7	Philp, W. M.	Edmonton, Alta.
1	Raney, P. H.	Toronto.
1	Rice, R. H.	Toronto.
7	Robertson, A. S.	Toronto.
4	Robertson, J. M.	Toronto.
7	Rothwell, H. D.	Gilford.
1	Rutherford, F. S.	Bolton.
3	Scott, J. G.	Toronto.
7	Servos, F. M.,	Niagara-on-the-Lake.
1	Sheppard, H. L.	Coldwater.
1	Sheppard, N. E. D.	Ottawa.
2	Shepley, J. G.	Gordon.
1	Shupe, S.	Attercliffe.
6	Sime, A. W.	Toronto.
1	Simpson, B. N.	Toronto.
1	Sinclair, C. E.	Meaford.
1	Skaith, J. B.	Toronto.
4	Skinner, W. C.	Toronto.
5	Smith, G. E.	Toronto.
1	Smith, H. M.	Goderich.
2	Smyth, G. M.	Merritton.
7	Standing, R. O.	Inglewood.

7	Stoneman, E. C. R.	Toronto.
1	Strome, I. R.	Brandon, Man.
1	Somers, N. L.	Villa Nova.
3	Tackaberry, S. G.	Toronto
2	Taylor, J. S.	Whitehorse, Y.T.
1	Temes, C. N.	Toronto.
3	Tennent, E. H	London.
1	Tilston, J. A.	Toronto.
1	Treloar, G. E.	Toronto.
7	Tull, W. S.	Toronto.
6	Twidale, E. A.	Niagara Falls.
1	VanDyke, F. T.	Grimsby.
3	Verity, M. F.	Brantford.
1	Waddell, H. O.	Port Hope.
1	Wagner, H. W.	Toronto.
1	Wallace, H. D. M.	Toronto.
1	Whitley, P. L.	Gorrie.
6	Wigle, A. E.	Kingsville.
7	Wigle, J. A.	Kingsville.
4	Wilson, A. C.	Toronto.
1	Wilson, H. P.	Toronto.
2	Young, R. W.	Bothwell.

Occasional.

Harper, C. J.	Toronto.

Students of other Faculties Taking Instruction in Assaying, Surveying, Etc.

Anderson, F. H.	Meaford.
Burns, J. G.	Toronto.
German, A. M.	Welland.
Hamil, C. B.	Charing Cross.
McLeod, A.	Goderich.
Parker, H. A.	Blairton.
Prowd, E. B.	Vancouver, B.C.
Simmons, J. F. L.	Brantford.
Trebilcock, J. A.	Toronto.

Summary.

First Year Students	144
Second Year Students	142
Third Year Students	179
Fourth Year Students	161
Students of Other Faculties	9
Occasional	1
	636

PRIZEMEN.

Engineering.

1879.	I.	Year	J. McAree	1st	Prize
1880.	II.	"	J. L Morris	1st	"
1881.	I.	"	G. H. Duggan	1st	"
	II.	"	D. Jeffrey	1st	"
1882.	I.	"	A. R. Raymer	1st	"
	I.	"	E. W. Stern	2nd	"
	II.	"	G. H. Duggan	1st	"
	III.	"	D. Jeffrey	1st	"
1883.	I.	"	B. A. Ludgate	1st	"
	I.	"	A. M. Bowman	2nd	"
	II.	"	A. R. Raymer	1st	"
	II.	"	E. W. Stern	2nd	"
	III.	"	G.H. Duggan	1st	"
1884.	II.	"	B. A. Ludgate	1st	"
	III.	"	E. W. Stern	1st	"
	III.	"	A. R. Raymer	2nd	"
1885.	I.	"	A. E. Lott	1st	"
	I.	"	J. Rogers	2nd	"
	II.	"	T. K. Thomson	1st	"
	III.	"	B. A. Ludgate	1st	"
1886.	I.	"	C. H. C. Wright	1st	"
	I.	"	J. E. Ross	2nd	"
	II.	"	A. E. Lott	1st	"
1887.	I.	"	H. E. T. Haultain	1st	"
	II.	"	C. H. C. Wright	1st	"
	III.	"	A. E. Lott	1st	"
	III.	"	J. Rogers	2nd	"
1888.	I.	"	E. B. Merrill	1st	"
	I.	"	F. M. Bowman	2nd	"
	II.	"	D. D. James	1st	"
	III.	"	C. H. C. Wright	1st	"
1889.	I.	"	J. K. Robinson	1st	"
	I.	"	G. E. Silvester	2nd	"
	II.	"	E. B. Merrill	1st	"
	II.	"	F. M. Bowman	2nd	"
	III.	"	D. D. James	1st	"
1890.	I.	"	C. Fairchild	1st	"
	II.	"	E. B. Merrill	1st	"
	III.	"	J. K. Robinson	1st	"
	III.	"	F. M. Bowman	2nd	"
1891.	I.	"	A. J. McPherson	1st	"
	I.	"	R. B. Watson	2nd	"
	II.	"	J. B. Goodwin	1st	"
	III.	"	G. E. Silvester	1st	"
	III.	"	C. W. Dill	2nd	"
1892.	I.	"	A. E. Bergey	1st	"
	I.	"	R. W. Angus	2nd	"
	II.	"	A. J. McPherson	1st	"
	II.	"	R. B. Watson	2nd	"
	III.	"	E. J. Laschinger	1st	"
	III.	"	C. Fairchild	2nd	"

The Grant of prizes was withdrawn at the close of 1892.

Architecture.

The prize in Architecture was the gift of Mr. D. B. Dick, Architect, Toronto.

1891.	I. Year	H. F. Ballantyne.
1892.	I. Year	J. A. Ewart..
1893.	I. Year	A. H. Harkness.
1894.	I. Year	E. A. Forward.
1895.	I. Year	W. F. Scott.
1896.	I. Year	D. Macintosh.
1899.	I. Year	W. F. Shepherd.

Civil Engineering.

Prizes awarded for general proficiency in the subjects of the Third Year

Date.	Name.	Donor.
1897.	M. B. Weekes	T. Kennard Thomson, C. E.
1898.	J. A. Stewart	"
1899.	T. Shanks	"
1900.	E. H. Phillips	"
1901.	H. P. Rust	"
1902.	W. F. Ratz	"
1903.	C. R. Young	"
1904.	W. N. Moorhouse	"
1905.	W. Barber	"
1905.	N. L. Crosby	Noel Marshall, Esq.
1906.	W. P. Near. B.A	T. Kennard Thompson, C.E.
1906.	W. A. M. Cook	Noel Marshall, Esq.
1907.	M. K. McQuarrie	T. Kennard Thomson, C. E..
1907.	T. H. Hogg	Noel Marshall, Esq....
1908.	M. Pequegnat	T. Kennard Thomson, C.E.
1909.	E. S. Martindale	"
1910.	W. H. Wilson	"
1911.	F. M. Pratt	"

Mining Engineering.

1905.	G. S. Scott	Hon. W. H. Montague, M. D.
1905.	W. A. Begg	"
1906.	J. A. McKenzie	"
1906.	W. Huber	"
1907.	B. Neilly	"

Mechanical Engineering.

1905.	W. G. Nicklin	Standard Silver Co.
1906.	D. W. Marrs	"
1907.	H. O. Hill	"

Electrical Engineering.

1905.	C. E. Sisson	Noel Marshall, Esq.
1906.	A. H. Hull	"
1907.	F. R. Ewart	"

Mechanical and Electrical Engineering.

Date.	Name.	Donor.
1897.	A. T. Gray	F. A. Riehle, Esq.
1898.	F. C. Smallpiece	"
1905.	C. B. Aylesworth	Standard Silver Co.
1906.	E. M. Wood	"
1907.	H. Raine	"

Architecture.

1906.	A. W. McConnell	Hon. W. H. Montague, M.D.
1907.	G. N. Molesworth	"

Analytical and Applied Chemistry.

1906.	C. C. Forward	Standard Silver Co.
1907.	P. F. Morley	"

Scholarship.

Awarded for General Proficiency in the Third Year in Mechanical Engineering.

1912.	A. S. Anderson	The Boiler Inspection and Insurance Co. of Canada.
1913.	E. D. W. Courtice	The Boiler Inspection and Insurance Co. of Canada.

Degree of Bachelor of Applied Science.

1911. Adams, J. H.
1913.*Adams, O. F.
1912.*Aitken, J.
1909. Akers, H. G.
1912. Allan, L. B.
1908.*Allen, F. G.
1893. Allison, T. H.
1913.*Alport, F.
1911. Amsden, W. G.
1909.*Amos, W. L.
1908. Anderson, F. J.
1910.*Anderson, R. M.
1897.*Angus, R. W.
1904.*Angus, H. H.
1901. Ardagh, E. G. R.
1912. Archer, E. G.
1911. Arens, R. J.
1907. Armer, J. C.
1896. Armstrong, J.
1911.*Austin, E. T.
1912.*Badgley, L. A.
1897.*Bain, J. W.
1911. Baird, J. A.
1912. Baird, W. J.
1907. Baker, M. H.
1894.*Ballantyne, H. F.
1907.*Banting, E. W.
1911. Barber, H. C.
1911. Barber, T.
1906.*Barber, W.
1901. Barley, J. H.
1911. Barnett, H. A.
1910. Barry, W. H.
1910. Bartlett, E.
1912. Bartley, T. H.
1907. Bates, M.
1910.*Bennett, G. A.
1910. Beckstedt, R. D. S.
1907.*Betts, H. H.
1902. Barrett, R. H.
1895. Beauregard, A. T.
1906. Begg, W. A.
1908.*Beynon, D. E.
1912. Billings, J. H.
1911. Bissett, D. G.
1910. Birchard, E. R.
1912. Bissett, J. R.
1910. Black, W. D.
1910.*Black, G. E.
1910.*Blackwood, W. C.
1911. Blizard, D. C.
1910. Bowers, G. H.
1903. Blair, W. J.
1905. Bonnell, M. B.
1902.*Boswell, M. C.
1912. Boulton, W. J.

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*Degree with honours.

1910. Bowen, G. H.
1911.*Bowman, E. P.
1908. Bowman, H. D.
1899. Boyd, W. H.
1912.*Brackinreid, T. W.
1909. Brady, W. S.
1902. Brandon, E. T.
1907. Brandon, H. E.
1909. Brechen, P. R.
1903. Brereton, W. P.
1907. Brian, M. E.
1911.*Brock, A. F.
1913.*Brock, W. M.
1896. Brodie, W. M.
1912.*Brouse, W. H. D.
1910. Brown, C. E.
1912. Brown, H. O.
1909. Brown, J. A.
1906. Brown, T. D.
1910. Brown, T. W.
1910. Browne, E. W.
1909. Buchan, P. H.
1895. Bucke, W. A.
1911.*Burgess, J. R.
1912. Burnham, G. H.
1910. Burns, J.
1909. Bush, C. E.
1907. Bunnell, A. E. K.
1906. Burnham, F. W.
1900. Burnside, J. T. M.
1905. Burwash, N. A.
1913.*Cain, E. T.
1910. Cameron, M. G.
1905. Calder, J. W.
1912.*Cale, W. C.
1911.*Campbell, A. D.
1909. Campbell, A. W.
1905. Campbell, A. J.
1905. Campbell, A. M.
1910. Campbell, J. E.
1911. Carlyle, W. M.
1898. Carpenter, H. S.
1909. Carscallen, H. R.
1899. Carter, W. E. H.
1903.*Chace, W. G.
1903.*Chadsey, S. B.
1912.*Chadwick, W. W.
1912.*Chandler, R. B.
1898. Charlton, H. W.
1912. Cherry, P. G.
1909. Chesnut, F. H.
1911. Chesnut, A. W.
1912. Chesnut, E. F.
1912. Chesnut, V. F.
1894.*Chewett, H. J.
1911. Chisholm, D. C.
1903.*Christie, W.
1905. Christie, U. W.
1912. Clark, H. J.
1911. Clark, H. S.
1911.*Cline, C. G.
1906. Coates, P. C.
1911. Cockburn, L. S.
1905.*Code, T. F.
1912.*Cole, D. B.
1910.*Coltham, G. W.
1912. Cook, A. S.
1900.*Chubbuck, L. B.
1902. Cockburn, J. R.
1911. Code, A. G.
1909. Collett, W. C.
1910.*Cooch, H. A.
1910. Collinson, J. G.
1911. Colquhoun, G. A.
1907.*Cook, W. A. M.
1909. Cory, R. Y.
1900. Coulthard, R. W.
1907. Cousins, E. L.
1909. Cowper, G. C.
1909.*Coyne, H.
1901. Craig, J. A.
1912.*Craig, J. H.
1911.*Craig, S. E.
1905. Crerar, S. R.
1906.*Crosby, N. L.
1911.*Crosby, T. H.
1912. Cruthers, W. M.
1909. Culbert, J. V.
1903.*Culbert, M. T.
1910.*Cummings, J. D.
1912.*Cunningham, C. H.
1909.*Dahl, A. D.
1910.*Dallyn, F. A.
1912. D'Alton, F. K.
1907. Daniels, W. N.
1910.*Davis, A. I.
1909. Davis, R. S.
1912. Davis, W. B.
1901. Davison, J. E.
1905. Davison, A. E.
1911.*Dean, C. D.
1907.*Death, N. P. F.
1902. DeCew, J. A.
1912. DeGuerre, F. C.
1910. Delahaye, W. H.
1913. DeLaporte, A. V.
1910. Derham, W. P.
1901. Dickson, G. W.
1901.*Dixon, H. A.
1911. Dobbin, R. L.
1896. Dobie, J. S.
1911.*Dobson, W. P.

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*Degree with honours.

1910.*Dodds, W. A.
1912. Dunbar, W. B.
1912.*Duncan, J. M.
1907. Dundass, C. S.
1909.*Dyer, F. C.
1902.*Eason, D. E.
1912. Eckert, C. H.
1909. Edwards, C.
1904. Edwards, W. M.
1912.*Elliot, J. A.
1912. Elliott, C. F.
1912. Elliott, G. R.
1897.*Elliott, H. P.
1911.*Emery, V. H.
1903. Empey, J. M.
1910. Evans, S. L.
1908. Evans, S. D.
1912. Evans, W. J.
1895.*Ewart, J. A.
1908.*Ewart, F. R.
1910. Falconer, F. S.
1910. Fargey, T. A.
1912. Farrell, K. A.
1904. Fensom, C. J.
1911.*Ferguson, C. R.
1906. Ferguson, G. H.
1910. Ferguson, J. B.
1911. Ferguson, J. W.
1910. Fergusson, A. T.
1906.*Fierheller, H. S.
1911. Fisken, J. B. K.
1910. Flanagan, O. L.
1911.*Fletcher, A. W.
1911. Fletcher, F. T.
1910. Flint, C.
1912. Flook, S. E.
1905.*Ford, A. L.
1901. Foreman, W. E.
1911. Foreman, J. M.
1909. Foster, A. H.
1911. Foulds, W. C.
1912. Frankel, E. L.
1911. Fraser, A.
1912. Freeland, E. E.
1912. Freeman, J. R.
1910. Freeman, T. E.
1910. Frost, E. R.
1912.*Fuller, R. J.
1908. Fux, P. C.
1904.*Gaby, F. A.
1903.*Gagne, S.
1911. Gall, H.
1911. Galletly, J. S.
1908.*Galt, G.
1904. Gardner, J. C.
1908.*Garrow, A. B.
1903.*Gibson, A. E.
1911. Gibson, M. M.
1904.*Gibson, N. R.
1912. Gibson, J. M.
1904. Gibson, W. S.
1904.*Gillespie, P.
1909. Gillies, A.
1911. Glover, A. E.
1911. Goad, V. A. E.
1912. Gooderham, J. L.
1912. Goodridge, H.
1894. Goodwin, J. B.
1911. Gourlay, V. F.
1912. Graham, E. B.
1910. Graham, D. A.
1908.*Graham C. W.
1899. Grant, W. F.
1908. Grasett, C. S
1910. Grassie, C. A.
1898. Gray, A. T.
1911. Gray, J. E.
1905. Gray, W. W.
1912. Greene, E. A.
1910. Greene, G. E. D.
1909. Greene, P. W.
1911. Greene, R. L.
1905. Greenwood, W. K.
1907. Guest, W. S.
1909.*Gulley, C. L.
1910. Gunn, W. W.
1910. Guy, E.
1909. Hackner, J. W.
1908.*Hagarty, R. E. W.
1897.*Haight, H. V.
1909. Hall, K.
1904. Hamilton, J. F.
1907. Hamilton, C. B.
1909. Hamilton, C. T.
1912. Hamilton, G. M.
1905. Hanes, G. S.
1900. Hare, W. A.
1897.*Harkness, A. H.
1908.*Harkness, A. L.
1906. Harris, C. J.
1911.*Harris, J. H.
1908. Harrison, E.
1907. Hartney, J. C.
1902. Harvey, C.
1910. Harvey, D. W.
1911.*Harvie, N. J.
1912. Heebner, M. B.
1901. Hemphill, W.
1909. Hendry, M. C.
1895. Herald, W. H.
1906.*Heron, J. B.
1907. Hett, S.

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*Degree with honours.

1906. Hewson, W. G.
1912.*Hickling, F. G.
1908.*Hill, H. O.
1912. Hill, H. R.
1908.*Hogg, T. H.
1901. Holcroft, H. S.
1910. Holmes, A. E.
1911. Holmes, C. R.
1908. Hookway, C. W.
1912. Hoover, O. H.
1907. Hopkins, C. H.
1911.*Hopkins, P. E.
1910. Hoshal, G. C.
1909. Huether, A. D.
1909.*Huether, D. J.
1912. Huff, A. J.
1910. Hughes, C.
1908.*Hull, A. H.
1896. Hull, H. S.
1910. Hunter, A. E.
1909. Hunter, A. N.
1908.*Hutton, C. H.
1912.*Hyatt, H.
1908. Hyland, H. M.
1908. Hyman, E. W.
1908.*Ireland, L. G.
1910. Irwin, H.
1910. Isbister, J.
1910. Jackes, F. P.
1909. Jackson, W.
1894. James, D. D.
1905. James, E. A.
1910. James, E. W.
1911. James, F. L.
1893. James, O. S.
1912. Jarvis, R. H.
1905. Jermyn, P. V.
1905.*Job, H. E.
1895. Johnson, S. M.
1902. Johnson, J. A.
1896. Johnson, A. C.
1910. Johnson, C. C.
1907. Johnston, C.
1910. Johnston, J. T.
1911. Johnston, C. E.
1911. Johnston, R. H.
1907. Jones, G. R.
1907. Jones, T.
1907. Jupp, A. E.
1908. Kay, E. W.
1894.*Keele, J.
1911.*Keith, J. C.
1910. Kemp, J. B. O.
1911. Kennedy, H. G.
1909. Keppy, J. D.
1910. Key, W. R.

1912.*King, J. T.
1908. Kinghorn, A. A.
1911. Kingstone, G. A.
1912.*Kirkwood, M.
1911. Kirwan, G. L.
1912. Kirwan, P. T.
1910. Klotz, H. N.
1903. Knight, R. H.
1911. Knight, S.
1899. Kormann, J. S.
1894. Laidlaw, J. T.
1893. Laing, A. T.
1909. Lamb, F. C.
1910. Lamont, A. W.
1906. Lancaster, H. M.
1907. Lang, J. L.
1910.*Langmuir, C. B.
1903. Langmuir, F. L.
1912.*Lanning, J.
1893.*Laschinger, E. J.
1901. Latham, R.
1906. Latornell, A.
1906. Latornell, A. J.
1893.*Lawson, W.
1893. Lee, W. A.
1911. Leaver, C. B.
1911. Lee, R. G.
1911. Leitch, J. N.
1910.*Lennox, A. E.
1908. LePan, A. D.
1909.*Leslie, J. N. M.
1912. Lieberman, M.
1913. Lillie, G. L.
1908. Linton, A. P.
1912. Long, A. L.
1906.*Loudon, T. R.
1912. Lowrie, A. W. P.
1907. MacKenzie, K. A.
1894. McAllister, A. L.
1895. McAllister, J. E.
1911. McAlpine, D. D.
1912. McAndrew, J. B.
1893. McAree, J.
1910. McArthur, A. S.
1905. McAuslan, H. J.
1904. McBride, A. H.
1911. McBride, T. C.
1910. McCollum, C. R.
1907.*McConnell, A. W.
1911. McCordick, A. S.
1905. McCuaig, O. B.
1910. McCuaig, P. J.
1911. McDougall, S. G.
1912.*McElhanney, T. A.
1893. McEntee, B.
1912. McEwen, H. J.

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*Degree with honours.

1905. McEwen, G. G.
1904. McFarlane, J. A.
1906. McFarlane, W. G.
1908.*McFarlane, J. B.
1912. McGhie, W. G.
1905.*McGibbon, C. P.
1896.*McGowan, J.
1908.*McGugan, D. J.
1912.*McIntosh, W. G.
1905. McKay, C. D.
1912. McKechnie, F. H.
1912. McKenzie, D. A.
1896.*McKinnon, H. L.
1912. McLaren, A. J.
1909. McLean, L. A.
1912.*McLellan, R. A.
1903. McMaster, A. T. C.
1901. McMillan, J. G.
1910. McMillan, V.
1909. McMordie, H. C.
1908. McNeill, F. W.
1911.*McNiven, J.
1894.*McPherson, A. J.
1912. McPherson, W. B.
1912. McQueen, A. A.
1909.*McRoberts, A. A.
1911. McSloy, J. I.
1895. McTaggert, A. L.
1902.*McVean, H. G.
1912. MacAndrew, W. M.
1912.*Macaulay, R. V.
1897. Macbeth, C. W.
1912.*MacBeth, R. E.
1897. MacCallum, A. F.
1912.*MacDonald, A. D.
1912. MacDonald, F. M.
1911. Macdonald, G. A.
1911. Macdonald, J. A.
1911. Macdonald, J. B.
1910. Macfarlane, E. D.
1912.*MacGregor, A. E.
1904. Macintosh, D.
1912.*MacKay, E. G.
1911. MacKinnon, J. A.
1907.*Maclachlan, W.
1912. MacLaurin, J. G.
1910. Maclean, B. A.
1912. MacLennan, G. G.
1911. MacLeod, D. D.
1911. MacMurchy, H. G.
1910. Macpherson, N. W.
1911.*MacTavish, H. J.
1912.*Madill, H. H.
1912. Maisonville, A. W. R.
1908. Malcolmson, W. S.
1912.*Malone, J. E.
1910. Manning, N. H.
1910. Manson, A. B.
1912. Marr, N.
1905. Marriott, F. G.
1909. Marshall, R. J.
1912. Martin, J. C.
1897. Martin, T.
1911. Martin, W. H.
1911.*Martindale, E. S.
1911. Martyn, O. W.
1908. Mason, D. H. C.
1903.*Matheson, P.
1911. Matthews, A. C.
1912. Meader, C. H.
1908. Melson, J. W.
1907.*Menzies, J. M.
1894.*Merrill, E. B.
1911. Merriman, H. O.
1908. Miller, L. R.
1911. Milligan, F. S.
1911. Milligan, G. L.
1908. Mills, G. G.
1912. Mills, L. G.
1911. Mills, P. E.
1893. Milne, C. G.
1896. Mines, W. H.
1909. Minns, J. B.
1895.*Minty, W.
1894. Mitchell, C. H.
1907. Mitchell, B. F.
1906. Moffatt, R. W.
1900. Monds, W.
1909. Monk, E. D.
1905.*Montgomery, R. H.
1909.*Moody, F. H.
1908. Moore, J. M.
1909. Morice, J. H.
1912. Morphy, J. A.
1910. Morris, C. A.
1911. Mortimer, F. R.
1910. Morton, G.
1909. Mowbray, F. E. H.
1911. Munro, A. H.
1906. Munro, G. R.
1910. Munro, F. V.
1909. Murdock, C. R.
1910. Murphy, C. J.
1912. Murphy, M. H.
1909. Murray, E. W.
1909.*Murray, W. P.
1912. Nash, J. C.
1907.*Near, W. P.
1901. Neelands, E. V.
1908. Neelands, E. W.
1908. Neelands, R. E. K
1908. Neilly, B.

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*Degree with honours.

1911.*Neville, E. A.
1904. Nevitt, I. H.
1911.*Newhall, V. A.
1910. Newton, J.
1911.*Newton, W. E.
1911. Nichol, F. T.
1907. Nicklin, W. G.
1912. Niebel, E. H.
1912. Nixon, C. K.
1912. Noble, E. S.
1912. Northey, R. K.
1908. Nourse, A. E.
1912. O'Donnell, V. J.
1912. O'Flynn, W. A.
1910. O'Hearn, J. J.
1914. Oke, W. V.
1904. Oliver, E. W.
1911. O'Neil, C. M.
1912. Orr, J. A.
1904. Pace, J. D.
1905. Pace, G.
1911. Palmer, C. E.
1906.*Pardoe, W. S.
1907. Park, D. G.
1905. Parke, J.
1911. Parker, G. C.
1912. Parker, J. S.
1912.*Parkin, J. H.
1904. Patten, B. B.
1912. Patten, J. McD.
1911. Pearce, K. K.
1909. Peckover, H. J.
1909.*Pequegnat, M.
1912. Perrin, W. J.
1910.*Petry, A. M.
1906. Phillips, E. P. A.
1911. Phillips, C. H.
1912. Pick, B. W.
1911. Pivnick, M.
1904. Plunkett, T. H.
1901. Pope, A. S. H.
1907. Porte, W. B.
1910. Porter, C. J.
1911. Potter, R. B.
1903.*Powell, G. G.
1912.*Pratt, F. M.
1902.*Price, H. W.
1909. Prochnow, F. E.
1909. Proctor, E. M.
1909. Publow, C. F.
1907. Purser, R. C.
1908. Quance, G. E.
1912. Quinlan, L. J.
1911. Ramsay, W. S.
1906. Ramsey, G. L.
1909.*Rannie, J. L.
1909.*Ransom, J. T.
1912.*Ratz, J. E.
1905. Raymond, D. C.
1912. Read, F. N.
1910.*Redfern, C. R.
1909.*Redfern, W. B.
1906. Reid, F. B.
1900.*Revell, G. E.
1900. Richards, E.
1910. Richardson, F. L.
1908. Richardson, C. W. B
1911. Richardson, C. E.
1912. Richardson, W. A.
1910. Ricker, H. A.
1906.*Riddell, M. R.
1901. Roaf, J. R.
1903. Robertson, H. D.
1907. Robertson, N. R.
1909. Robertson, A. R.
1898.*Robinson, A. H. A.
1912. Robinson, W. E.
1913.*Roblin, H. L.
1908. Roddick, J. O.
1907. Rogers, C. H.
1912.*Rogers, L. J.
1907. Rolfson, O.
1909.*Rose, R. R.
1912. Ross, D.
1912. Ross, O. W.
1907. Ross, R. C.
1907.*Rothwell, T. E.
1905. Roxborough, G. S.
1905. Rutherford, F. N.
1910.*Rutledge, L. T.
1912. Rutley, F. G.
1902. Rust, H. P.
1910. Sanderson, A. U.
1911.*Sara, R. A.
1902. Sauer, M. V.
1901. Saunders, H. W.
1912. Scandrett, F. R.
1905.*Scheibe, H. M.
1911. Schlarbaum, A.
1910. Schwenger, C. E.
1912. Scott, Miss H. E.
1912.*Scott, J. W.
1908.*Scott, W. A.
1912. Seaton, N. D.
1913. Segre, B. H.
1912.*Seibert, F. V.
1913.*Seymour, H. L.
1900.*Shanks, T.
1912. Shaw, M. R.
1912. Shaw, W. C.
1909. Shaw, W. E. V.
1909. Shearer, H. F.

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*Degree with honours.

1905. Sheply, J. D.
1895. Shields, J. D.
1899. Shipley, A. E.
1906. Shirriff, C. H.
1912.*Sills, C. P.
1903. Sinclair, D.
1906. Slater, F. W.
1902.*Smallpiece, F. C.
1898. Smiley, R. W.
1908.*Smith, D. A.
1904. Smith, H. G.
1912.*Smith, M. L.
1912.*Smith, W. C.
1905. Smither, W. J.
1908. Smithrim, E. R.
1912. Sneath, R. G.
1911. Sparling, M. W.
1894.*Speller, F. N.
1908.*Spencer, A. C.
1912. Spry, R. J.
1912. Squire, G. E.
1894. Squire, R. H.
1909. Stamford, W. L.
1909. Starr, R. H.
1910. Stayner, D. S.
1911.*Steele, A. L.
1912. Steele, W. S.
1911. Steven, H. M.
1902. Stevenson, W. H.
1912.*Stewart, A. E.
1908. Stewart, L. D. N.
1912. Stewart, R.
1909. Stewart, R. B.
1909.*Stewart, W. M.
1911.*Stewart, N. C.
1908.*Stiles, J. A.
1909.*Stiver, J. L.
1912.*Story, R. A.
1911. Street, J. C.
1910. Stroud, S.
1909. Stuart, H. B.
1910. Stuart, J. L. G.
1898.*Stull, W. W.
1909. Summers, G. F.
1911. Sutherland, A. L.
1911. Sutherland, C. C.
1903. Sutherland, W. H.
1910. Swan, R. G.
1906. Swan, W. G.
1911.*Sword, A. D.
1910.*Tate, H. W.
1912. Taylor, R.
1910.*Taylor, W. E.
1910. Taylor, J. W. R.
1903. Teasdale, C. M.
1912. Temple, J. B.
1900.*Tennant, D. C.
1901. Tennant, W. C.
1912. Ternan, E. A.
1909. Thomas, V. C.
1908. Thompson, P. M.
1911. Thompson, R. M. A.
1893. Thomson, R. W.
1905. Thomson, S. E.
1906. Thomson, L. R.
1907. Thomson, J. E.
1908. Thomson, O. R.
1901. Thorne, S. M.
1909. Thornley, J. H.
1901. Thorold, F. W.
1908. Tillson, E. D.
1910. Tipper, G. A.
1910. Toms, C. G.
1912. Torrance, R. D.
1912. Tough, W. G.
1905. Townsend, C. J.
1905.*Townsend, D. T.
1906. Traill, J. J.
1904. Trees, S. L.
1910.*Trees, A. G.
1896. Tremaine, R. C. C
1905. Trimble, A. V.
1905. Tucker, B. B.
1910. Turnbull, W. G.
1906.*Turner, W. E.
1911. VanAllen, K. M.
1911.*Van Norman, C. P
1910. Vatcher, A.
1911. Venney, L. T.
1900. Wagner, W. E.
1906. Wagner, H. L.
1912. Waite, J. H. C.
1912. Walcott, W. D.
1911. Walker, C. M.
1905.*Walker, E. W.
1910. Walker, J. A.
1912. Walker, R. M.
1912. Wallace, G. L.
1911. Walton, T.
1912. Wardell, A.
1911. Warrington, G. A.
1912. Watson, F. E.
1906. Watson, J. P.
1911. Watson, M. B.
1912. Waugh, B.
1910. Webb, C. E.
1909. Wedlake, R. M.
1898. Weekes, M. B.
1901. Weir, H. M.
1912.*Welford, P. G.
1906.*Wells, A. F.
1910.*West, A. M.

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*Degree with honours.

1912. Wheler, A. G.
1911. White, F. C.
1909. White, W. J.
1912. Whitside, J. L.
1911. Wickens, W. S.
1908.*Wilkes, E. D.
1912. Wilkes, G. H.
1905.*Williams, C. G.
1912.*Williams, E. R.
1911.*Williams, G. K.
1910.*Williams, J. A. McK.
1899.*Williamson, D. A.
1910. Williamson, O. T. G.
1911. Wilson, F. F.
1911.*Wilson, L. R.
1904.*Wilson, N. D.
1908.*Wilson, J. N.
1908. Wilson, A. F.
1909.*Wilson, F. D.
1912.*Wilson, W. H.
1908.*Wood, E. M.
1911. Woods, M. H.
1911. Wookey, S. A.
1912. Worden, W. G.
1905. Worthington, W. R.
1893.*Wright, C. H. C.
1911. Wright, L. A.
1902. Wright, R. T.
1905. Wright, W. F.
1912.*Wright, W. J. T.
1912. Wylie, W. H.
1911.*Youell, A. W.
1912.*Young, A.
1905.*Young, C. R.
1912. Young, S.
1907. Young, W. H.
1911. Young, W. S.
1903. Zahn, H.
1909.*Zimmer, A. R.

Degree of Civil Engineer (C.E.).

1898. Alison, T. H.
1889. Ashbridge, W. T.
1895. Bowman, A. M.
1893. Bowman, F. M.
1892. Chewett, H. J.
1900. Connor, A. W.
1913. Dallyn, F. A.
1901. Francis, Walter J.
1900. Haultain, H. E. T.
1893. Innes, W. L.
1913. James, E. A.
1886. Kennedy, J. H.
1908. MacCallum, A. F.
1913. Marrs, C. H.
1885. Morris, J. L.
1896. Moore, J. E. A.
1898. Mitchell, C. H.
1901. McDowall, R.
1895. McAllister, J. E.
1909. Oliver, E. W.
1911. Swan, W. G.
1889. Tyrrell, J. W.
1894. Tyrrell, H. G.
1892. Thomson, T. K.

Degree of Mining Engineer (M.E.).

1887. Bucke, M. A. (deceased)
1913. Forbes, D. L. H.
1900. Laidlaw, J. T.
1909. Thomson, R. W.
1910. McMillan, J. G.
1912. Burwash, L. T.

Degree of Mechanical Engineer (M.E.).

1913. Christie, A. G.
1913. Darling, E. H.
1908. Fensom, C. J.
1901. Johnston, A. C.
1905. Laschinger, E. J.
1913. Manson, G. J.
1913. Smart, R. S.
1900. White, A. V.

Degree of Electrical Engineer (E.E.).

1896. Ross, R. A.
1903. Chubbuck, L. B.
1902. Elliott, H. P.
1905. Hemphill, W.
1913. Mitchell, P. H.

---

*Degree with honours.

GRADUATES.

Graduates are requested to inform the Secretary of changes in their addresses.

1881.

1. J. L. MORRIS, C.E., O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.

1882.

1. D. JEFFREY, Windsor, Missouri
Contractor.
1. J. H. KENNEDY, C.E., O.L.S., Vancouver, B.C.
Chief Engineer, Great Northern Ry.
1. J. MCAREE, B.A.Sc., D.T.S. (deceased).

1883.

1. D. BURNS, O.L.S., A.M. Can. Soc. C.E., Pittsburgh, Pa.
Instructor in Mathematics and Plan Drawing, Carnegie Technical Schools.
1. G. H. DUGGAN, M. Can. Soc. C.E., Lachine, Que.
Vice-President and Chief Engineer, Dominion Bridge Co., Ltd.
1. J. W. TYRRELL, C.E., D.L.S., Hamilton, Ont.
Tyrrell & MacKay, Consulting Engineers and Surveyors.

1884.

1. W. C. KIRKLAND, New Orleans, La.
Principal Assistant Engineer, Drainage, Sewage and Water Board of New Orleans
1. J. MCDOUGALL, B.A. (deceased).
1. A. R. RAYMER, Pittsburgh, Pa.
Assistant Chief Engineer, P. & L. E. Ry.
1. JAMES ROBERTSON, O.L.S., Toronto, Ont.
Commissioner, The Canada Co.
1. E. W. STERN, M. Am. Soc. C.E., 101 Park Ave. New York.
Consulting Engineer.

1885.

1. J. F. BLEAKLEY, Bowmanville, Ont.
Civil Engineer.
1. H. J. BOWMAN, D. & O.L.S., M. Can. Soc. C.E., Berlin, Ont.
Bowman & Connor.
1. E. E. HENDERSON, O.L.S., Henderson, P.O., Me.
Civil Engineer.
1. B. A. LUDGATE, O.L.S., Pittsburgh, Pa.
Assistant Engineer, P. & L. E. Ry.
1. O. MCKAY, O.L.S., Walkerville, Ont.
Civil Engineer and Surveyor.

1886.

1. A. M. BOWMAN, D.L.S., Pittsburgh, Pa.
Pennsylvania Contracting Co.
1. E. B. HERMON, D. & O.L.S., Vancouver, B.C.
Assistant Engineer Vancouver Power Co.
1. ROBERT LAIRD, O.L.S., Haileybury, Ont.
Laird & Routley, Engineers and Surveyors.
1. T. KENNARD THOMSON, C.E., M. Can. Soc., C.E., M. Am. Soc. C.E., Hudson Terminal Building, New York.
Consulting Engineer.
1. H. G. TYRRELL, C.E., A.M. Can. Soc. C.E., 540 Judson Ave., Evanston, Ill.
Consulting Engineer.

1887.

1. J. C. BURNS (deceased).
1. A. E. LOTT, Los Angeles, Cal.
Consulting Railway Engineer, 441 Bradbury Building.
1. A. L. McCULLOUGH, O.L.S., B.C.L.S., A.M. Can. Soc. C.E., Nelson, B.C.
Engineer and Surveyor.
1. F. MARTIN, M.B., O.L.S.,
Physician.
1. C. H. PINHEY, D. & O.L.S., 110 Wellington St., Ottawa, Ont.
1. J. ROGERS, O.L.S., Mitchell, Ont.
Town Engineer.

1888.

1. J F. APSEY, O.L.S., 3 N. Calvert St., Baltimore, Md.
Assistant Division Engineer, Baltimore Sewerage Commission.
1. W. T. ASHBRIDGE, C.E., 1444 Queen St. E., Toronto, Ont.
Engineer and Surveyor.
1. EDWARD F. BALL, A.M., Can. Soc. C.E., 335 Madison Ave., New York, N.Y.
Chief Assis ant Engineer of Resurveys, Land and Tax Department, N. Y. Central and Hudson River Railroad.
1. D. B. BROWN, O.L.S., Quebec, P.Q
Locating Engineer, Transcontinental Ry. (G.T.P.)
1. C. M. CANNIFF, Toronto, Ont.
Consulting Engineer.
1. H. J. CHEWETT, B.A.Sc., C.E., A.M. Can. Soc. C.E., Manning Arcade, Toronto, Ont.
Mechanical Engineer, Evans Rotary Engine Co., Ltd.
1. J. GIBBONS, D. & O.L.S., Ottawa, Ont.
Surveying Staff, Department of Interior.
1. R. McDOWALL, O.L.S., C.E., A.M. Can. Soc. C.E., Owen Sound, Ont.
Town Engineer.
1. G. W. McFARLEN, O.L.S., Toronto, Ont.
City Engineer's Staff.
1. C. J. MARANI, Anacortes, Wash.
Designing and Consulting Structural Engineer for the Russia Cement Co.
1. G. R. MICKLE, B. A., Toronto, Ont.
Mine Assessor, Province of Ontario.
1. J. H. MOORE, O.L.S., Smith's Falls, Ont.
Town Engineer.
1. G. H. RICHARDSON, Edmonton, Alta.
Managing Director, Yellowhead Pass Coal & Coke Co.

1888—*Continued.*

1. K. Rose, Curry Bldg., Toronto
Manager, Evans Rotary Engine Co. of Canada.
1. J. E. Ross, D. & O.L.S., Kamloops, B.C.
Surveying Staff, Department of Interior.
1. C. H. C. Wright, B.A.Sc., Toronto, Ont.
Professor of Architecture, University of Toronto.

1889.

1. B. Carey, Toronto, Ont.
1. W. J. Chalmers, Vanport, Beaver Co., Pa.
Asst. Engineer, Ohio River Department for U. S. Government.
1. W. A. Clement, M. Can. Soc. C.E., South Vancouver, B.C.
Municipal Engineer.
1. G. F. Hanning, St. Eustache, Two Mountains, Quebec.
Divisional Engineer, C.N.R.
1. H. E. T. Haultain, C.E., M. Can. Soc. C.E., Toronto, Ont.
Professor of Mining Engineering, University of Toronto.
1. J. Irvine (deceased).
1. D. D. James, B.A., B.A.Sc., 227 George St., Toronto.
Surveyor.
1. F. X. Mill (deceased).
1. H. K. Moberley, D. & S.L.S., Moosomin, Sask.
District Engineer and Surveyor.
1. T. R. Rosebrugh, M. A., Toronto, Ont.
Professor of Electrical Engineering, University of Toronto.
1. T. Wickett, M.D., 25 Nightingale St., Hamilton, Ont.
Physician.

1890.

5. W. E. Boustead (deceased).
1. F. M. Bowman, O.L.S., C.E., Pittsburgh, Pa.
Blaw Steel Const. Co.
1. M. A. Bucke, M.E. (deceased).
1. G. D. Corrigan (deceased).
1. J. A. Duff, B.A. (deceased).
1. A. B. English (deceased).
1. N. L. Garland, 76 Wellington St. W., Toronto, Ont.
1. J. Hutcheon, O.L.S., Guelph, Ont.
Civil Engineer.
1. W. L. Innes, O.L.S., C.E., Simcoe, Ont.
Manager, Dominion Canners, Ltd.
1. E. B. Merrill, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E. Toronto, Ont.
Consulting Engineer, Toronto General Trusts Building.
1. J. R. Pedder (deceased).
3. R. A. Ross, E.E., 80 St. Francois Xavier St., Montreal, Que.
Consulting Electrical and Mechanical Engineer.
1. T. H. Wiggins, O.L.S., Saskatoon, Sask.
Civil Engineer and Dom. Land Surveyor.
1. W. J. Withrow. Ottawa, Ont.
Patent Examiner, Patent Office.

1891.

1. H. J. BEATTY, O.L.S., Pembroke, Ont.
Engineer and Surveyor.
1. T. R. DEACON, O.L.S., M. Can. Soc. C.E., Winnipeg, Man.
President and General Manager, Manitoba Bridge & Iron Works, Ltd.
1. C. W. DILL, M. Can. Soc. C.E., Winnipeg, Man.
General Manager, The National Paving Co.
5. O. S. JAMES, B.A.Sc., 227 George St., Toronto, Ont.
1. A. LANE (deceased).
1. J. E. MCALLISTER, B.A.Sc , C.E., 501 Standard Bank Bldg., Toronto, Ont.
Consulting Engineer.
3. E. B. MERRILL, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E., Toronto, Ont.
Consulting Engineer, Toronto General Trusts Building.
1. J. E. A. MOORE, C.E., 1884 E. 84th St., Cleveland, O.
Chief Engineer, C. O. Bartlett & Snow Co
1. W. NEWMAN, O.L.S., A.M., Can. Soc. C.E. Windsor, Ont.
Consulting Engineer.
1. J. K. ROBINSON (deceased).
1. W. B. RUSSEL, 1307 Traders Bank Bldg., Toronto, Ont.
Civil Engineer and Contractor.
1. G. E. SILVESTER, O.L.S., M. Am. Inst. M.E., Copper Cliff, Ont.
Chief Engineer, Canadian Copper Co.
1. H. D. SYMMES, Niagara Falls S., Ont.
Engineer and Contractor.

1892.

1. J. R. ALLAN, O.L.S., Renfrew, Ont.
1. T. H. ALISON, B.A.Sc., C.E., Bayonne, N.J.
Secretary and Chief Engineer, Bergen Point Iron Works.
1. A. G. ANDERSON. Port Dover, Ont.
Hardware Merchant.
1. C. FAIRCHILD, D. & O.L.S., 608 Tegler Blk., Edmonton, Alta.
Consulting Engineer and Surveyor.
1. J. B. GOODWIN, B.A.Sc., Healey Falls, Ont.
Supt. for Midland Const. Co
4. C. E. LANGLEY, Continental Life Bldg., Toronto, Ont.
Langley & Howland, Architects.
1. A. T. LAING, B.A.Sc., Toronto, Ont.
Secretary and Lecturer, Faculty of Applied Science, University of Toronto.
1. E. J. LASCHINGER, B.A.Sc., M.E., Johannesburg, Transvaal, S.A.
Mechanical Engineer, H. Eckstein & Co.
5. W. L. LAWSON, B.A.Sc., Sterling, Col.
Manager Great Western Sugar Co.
3. W. A. LEE, B.A.Sc. (deceased).
1. B. MCENTEE, B.A.Sc., 38 Queen St. E., Toronto.
Stationer.
3. C. G. MILNE, B.A.Sc. (deceased).
1. CHAS. H. MITCHELL, B.A.Sc., C.E., Ca. Mn. Soc. C.E., M. Am. Soc. C.E.
Consulting Hydro-Electric Engineer, Traders Bank Bldg., Toronto.
1. N. L. PLAYFAIR, Vancouver, B.C.
1. J. M. PRENTICE (deceased).
1. J. A. ROSS, Cleveland, Ohio.
Designer L. S. & M. S. Railway, Engineering Office.

1892—*Continued.*

1. ALBERT N. SMITH, Youngstown, Ohio.
Engineer, Wm. B. Pollock Co.
1. R. W. THOMSON, B.A.Sc., M.E., 4 Charles St. W., Toronto, Ont.
Mining Engineer.
3. A. V. WHITE, M.E., Ottawa, Ont.
Conservation Commission.

1893.

1. A. G. ARDAGH, Barrie, Ont.
Land Surveyor and Civil Engineer.
4.*H. F. BALLANTYNE, B.A.Sc., 2 West 47th St., New York, N.Y.
Architect.
1. G. L. BROWN, O.L.S., A.M. Can. Soc. C.E., Morrisburg, Ont.
Civil Engineer and Land Surveyor.
1.*L. C. CHARLESWORTH, D.L.S., Edmonton, Alta.
Director of Surveys for Alberta.
1. T. H. DUNN, O.L.S., Ottawa, Ont.
Water Power Branch Dept. of The Interior.
1. J. M. R. FAIRBAIRN, P.L.S., Westmount, Que.
Assistant Engineer, C. P. R.
4.*W. FINGLAND, 334 Portage Ave., Winnipeg, Man.
Architect.
1. C. FORRESTER, Toronto, Ont.
1.*WALTER J. FRANCIS, C.E., M. Can. Soc. C.E., M. Am. Soc. C.E., Montreal, Que.
Walter J. Francis & Co., Consulting Engineers, 232 St. James St.
3.*A. R. GOLDIE, Galt, Ont.
Manager ,Goldie & McCulloch Co.
3. S. C. HANLY, Midland, Ont.
Midland Engine Works Co.
4.*J. KEELE, A.M., B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.
1. J. T. LAIDLAW, B.A.Sc., M.E., Cranbrook, B.C.
Consulting Mining Engineer.
3. F. L. LASH, Bandoeng, Java.
Manager, Electrical Supply Co., Board of Trade Building.
1. A. L. MCALLISTER, B.A.Sc., 501 Standard Bank Bldg., Toronto, Ont.
Consulting Engineer.
1. T. J. MCFARLEN, Port Arthur, Ont.
Chemist, Atikokan Iron Co.
1. A. J. MCPHERSON, B.A.Sc., D.L.S., Regina, Sask.
City Commissioner.
1. A. F. MACALLUM, B.A.Sc., C.E., Hamilton, Ont.
City Engineer.
1. W. T. MAIN, Wells St. Depot, Chicago, Ill.
Division Engineer, C. & N. W. Ry.
1. V. G. MARANI, Cleveland, Ohio.
City Building Inspector, City Hall.
1. W. MINES, B.A.Sc., Chicago, Ill.
Mechanical Engineer, Hoover & Mason.
3.*J. M. ROBERTSON, Montreal, P.Q.
Consulting Engineer.

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*Diploma with honours.

1893—*Continued.*

1. R. K. RUSSELL. Pembroke, Ont.
Railway Contractor.
1.*F. N. SPELLER, B.A.Sc., Pittsburgh, Pa.
Metallurgical Engineer, National Tube Co.
1. H. R. SQUIRE, B.A.Sc., O.L.S. (deceased).
1. W. V. TAYLOR, O.L.S., A.M. Can. Soc. C.E., Quebec, P.Q.
Quebec Harbour Commissioners.
1.*R. B. WATSON (deceased).

1894.

3.*R. W. ANGUS, B.A.Sc., Toronto, Ont.
Professor of Mechanical Engineering, University of Toronto.
1. H. F. BARKER, Box 31, Halifax, N.S.
1. A. T. BEAUREGARD, B.A.Sc., Verona, N.J.
Laboratory Engineer, Public Service Corporation of New Jersey.
1. A. E. BERGEY, Pittsburgh, Pa.
Assoc. Professor, Carnegie Inst. of Technology.
3. D. G. BOYD, Toronto, Ont.
Department of Lands and Mines, Parliament Buildings.
3. W. A. BUCKE, Toronto, Ont.
District Manager, Canadian General Electric Co.
1. J. CHALMERS, O.L.S., A.M. Can. Soc. C.E., Edmonton, Alta.
City Commissioner, Department of Public Works.
4.*J. A. EWART, B.A.Sc., 193 Sparks St., Ottawa, Ont.
Architect.
3. W. J. HERALD, B.A.Sc., Toronto. Ont.
Engineering Department, Canada Foundry Co.
3. H. E. JOB, B.A.Sc., Hamilton, Ont.
Manufacturer of Electrical Machinery and Apparatus.
3. A. C. JOHNSTON, B.A.Sc., M.E., Philadelphia, Pa.
Vice-President and Chief Engineer, The J. M. Dodge Co.
1. S. M. JOHNSTON, B.A.Sc., B.C.L.S. Greenwood, B.C.
1. J. E. JONES, Engineers' Club, New York, N.Y.
3. N. M. LASH, Montreal, P.Q.
Assistant Electrical Engineer, Bell Telephone Co.
1.*A. L. MCTAGGART, B.A.Sc., 703 Arch St., Pittsburg, Pa.
Mechanical Engineer.
3.*W. MINTY, B.A.Sc., Blackburn, Eng.
With Messrs. Yates & Thom, Ltd., Engineers.
3. C. J. NICHOLSON, Hamilton, Ont.
Assistant Engineer, Toronto, Hamilton & Buffalo Ry.
1. H. ROLPH, Montreal, Que.
Secretary, John S. Metcalf Co., Ltd.
1. J. D. SHIELDS, B.A.Sc., Toronto, Ont.
Sewer Engineer, Staff of City Engineer.
1. ANGUS SMITH, O.L.S., A.M. Can. Soc. C.E., Prince Albert, Sask.
City Engineer.
3. A. K. SPOTTON. Galt, Ont.
Chief Engineer, Goldie & McCulloch Engine Works.
3. R. T. WRIGHT, B.A.Sc., East Pittsburgh, Pa.
Engineering Department, Westinghouse Machine Co.

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*Degree with honours.

1895.

1. J. Armstrong, B.A.Sc., LePas, Man.
Chief Engineer of the Hudson Bay Ry.
3. A. E. Blackwood, 30 Church St., New York.
Manager New York Office, Sullivan Machinery Co.
1. E. J. Boswell, D.L.S., Toronto, Ont.
With C. P. R.
3. G. Brebner (deceased).
3. W. M. Brodie, B.A.Sc., Pittsburgh, Pa.
With the Green Engineering Co. of Chicago.
3. L. L. Brown, The Woolworth Bldg., New York.
Vice-President, The Foundation Co.
4. R. J. Campbell, Chicago, Ill.
Artist, Chicago Tribune.
3. A. W. Connor, B.A., C.E., 36 Toronto St., Toronto, Ont.
Bowman & Connor, Consulting Engineers.
1. J. S. Dobie, B.A.Sc., O. & D.L.S., Thessalon, Ont.
President, O. L. S. Assoc.
1. F. W. Guernsey, Trail, B.C.
4.*A. H. Harkness, B.A.Sc., Toronto, Ont.
Structural Engineer, Confederation Life Building.
3. H. S. Hull, B.A.Sc., Johnstown, Pa.
Structural Drawing, Cambria Steel Co.
3.*J. McGowan, B.A., B.A.Sc., Toronto, Ont.
Associate Professor of Applied Mechanics, University of Toronto.
3. W. N. McKay, Georgetown, Ont.
Manager of Bank of Hamilton.
3. H. L. McKinnon, B.A.Sc., Cleveland, Ohio.
Vice-President of The C. O. Bartlett & Snow Co.
1. W. W. Meadows, D. & O.L.S., Maple Creek, Sask.
Department of Public Works.
1. F. J. Robinson, D. & O.L.S., Regina, Sask.
Deputy Minister of Public Works, Saskatchewan.
3. F. T. Stocking, Toronto, Ont.
Hydro-Electric Commission.
3. R. C. C. Tremaine, B.A.Sc. (deceased).

1896.

2.*J. W. Bain, B.A.Sc., Toronto, Ont.
Associate Professor of Applied Chemistry, University of Toronto.
2. L. T. Burwash, Dawson, Y.T.
Mining Recorder.
3.*G. M. Campbell, Riverside, Ill.
Superintendent, Power Apparatus Shops, Western Electric Co.
2. J. A. Decew, B.A.Sc., 615 Canadian Express Bldg., Montreal, Que.
Chemical Engineer, Pres. Process Engineers Ltd.
3.*H. P. Elliott, B.A.Sc., E.E., Toronto, Ont.
Consulting Electrical Engineer.
3. W. C. Gurney, Toronto, Ont.
Vice-President, Gurney Foundry Co., Ltd.
3.*H. V. Haight, B.A.Sc., Sherbrooke, P.Q.
Chief Engineer, Canadian Ingersoll Rand Drill Co. Ltd.

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*Diploma with honours.

1896—*Continued.*

1. W. F. Laing (deceased).
3. R. R. Lawrie (deceased).
3. C. MacBeth, B.A.Sc. (deceased).
3. J. A. MacMurchy, Pittsburgh, Pa.
Chief Draftsman, Turbine Department, Westinghouse Machine Co.
1. T. Martin, B.A.Sc., Calgary, Alta.
Assistant Divisional Engineer, C. P. R., Western Division.
3. R. R. Scheibe, Toronto, Ont.
Sales Manager, Brigdens, Ltd.

1897.

2. E. Andrewes, B.Sc., A.M.I.C.E., Portmadoc, N. Wales.
Resident Engineer, Maenofferen Slate Quarry Co., Ltd.
2.*J. A. Bow, Great Falls, Mont.
B. & M. Smelter.
1. H. S. Carpenter, B.A.Sc., O.L.S., Regina, Sask.
Superintendent of Highways, Department of Public Works.
5. H. W. Charlton, B.A.Sc., Ottawa, Ont.
Examiner, Patent Office.
4.*E. A. Forward, A.M. Can. Soc. C.E., Lockport, Man.
Engineer-in-charge, St. Andrew's Lock and Dam.
3.*A. T. Gray, B.A.Sc., Schenectady, N.Y.
Designing Engineer on Steam Turbines, General Electric Co.
3. W. A. B. Hicks, Buffalo, N.Y.
With Lackawanna Steel Co.
4. C. F. King, Toronto, Ont.
Rep. of Mortimer Co. of Ottawa.
1. H. W. Proudfoot (deceased).
2.*A. H. A. Robinson, B.A.Sc., M.A.I. M.E., Haileybury, Ont.
Mine Inspector.
4. W. F. Scott, Toronto, Ont.
Structural Engineer and Consulting Architect.
3.*W. R. Smiley, B.A.Sc., Cleveland, Ohio.
With Wellman-Seaver-Morgan Engineering Co.
2.*W. W. Stull, B.A.Sc., O.L.S., Sudbury, Ont.
Surveyor and Mining Engineer.
1.*M. B. Weekes, B.A.Sc., D.L.S., Regina, Sask.
Department of Public Works.
1. E. A. Weldon, Winnipeg, Man.
Investment Broker, 711 McIntyre Block.

1898.

1. W. H. Boyd, B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.
2. W. E. H. Carter, B.A.Sc., 83-85 Front Street East, Toronto, Ont.
Consulting Mining Engineer.
3. E. H. Darling, A.M. Can. Soc. C.E., Hamilton, Ont.
Resident Engineer East Hamilton Plant, Hamilton Bridge Works Co.
1. W. F. Grant, B.A.Sc., Sault Ste. Marie, Ont.
City Engineer.

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*Diploma with honours.

1898—*Continued.*

1. J. S. Kormann, B.A.Sc., Toronto, Ont.
Manager, Kormann Brewing, Ltd.
3. J. E. Lavrock, Vancouver, B.C.
Draftsman, Hermon & Burwell.
4. D. MacKintosh, B.A.Sc., B.Arch., New York, N.Y.
Chief Superintendent F. M. Andrews & Co., Metropolitan Tower.
1.*F. W. McNaughton, O.L.S., Winnipeg, Man.
Deputy Minister of Public Works.
1. J. H. Shaw, O.L.S., North Bay, Ont.
Surveyor and Engineer.
3. A. E. Shipley, B.A.Sc., Nelson, B.C.
Manager, Nelson Coke & Gas Co.
3.*F. C. Smallpiece, B.A.Sc., 1233 2nd St. E., Calgary, Alta.
Chief Engineer, General Supplies Co.
1.*R. W. Smith, P.L.S., Revelstoke, B.C.
Surveyor.
1.*J. A. Stewart, M.A., Toronto, Ont.
Chief Engineer, Toronto Structural Steel Co.
1.*H. L. Vercoe, Montreal, Que.
3. T. A. Wilkinson, New York, N.Y.
Statistician, Westinghouse Church Kerr Co.
3. D. A. Williamson, B.A.Sc., Hamilton, Ont.
With Hamilton Bridge Works Co.

1899.

3.*T. Barber, Meaford, Ont.
Hydraulic Engineer, Chas. Barber & Sons.
2. J. T. M. Burnside, B.A.Sc., Montreal, Que.
3. L. B. Chubbuck, B.A.Sc., E.E., Hamilton, Ont.
Engineer, Canadian Westinghouse Co.
2. G. A. Clothier, Rossland, B.C.
Engineer, Le Roy Mining Co.
1. C. Cooper, Koekuk, Iowa.
Koekuk & Hamilton Water Power Co.
2. R. W. Coulthard, B.A.Sc., Blairmore, Alta.
General Manager, West Canadian Collieries, Ltd.
3. J. A. Craig, B.A.Sc., Toronto, Ont.
Office of Willis Chipman, C.E.,
2. J. C. Elliott, Kelso, Ont.
3. W. E. Foreman, B.A.Sc., Pittsburgh, Pa.
Construction Dept., Westinghouse Electric and Mfg. Co.
3. E. Guy, B.A.Sc., Winnipeg, Man.
With Smith, Kerry & Chace.
3.*W. Almon Hare, B.A.Sc., A.M., Can. Soc. C.E., Toronto, Ont.
President, The Hare Engineering Co.
1. R. Latham, B.A.Sc., Hamilton, Ont.
Chief Engineer, T. H. & B. Ry.
3. W. Monds, B.A.Sc., 36 Toronto St., Toronto, Ont.
Clark & Monds, Consulting Engineers.
1. J. Patterson, B.A., Toronto, Ont.
Physicist, Dominion Observatory.

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*Diploma with honours.

1899—*Continued.*

3. A. S. H. Pope, B.A.Sc., Portland, Oregon.
Pope & Wilcox, Electrical and Mechanical Engineers.
2. G. E. Revell, B.A.Sc., Nelson, B.C.
3.*E. Richards, B.A.Sc., Ottawa, Ont.
Customs Appraiser.
3. G. A. Saunders, Toronto, Ont.
Asst. Engineer, Hydro-Electric Commission.
1.*T. Shanks, B.A.Sc., D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1.*D. C. Tennant, B.A.Sc., Lachine Locks, Que.
Chief Draftsman with Dominion Bridge Co.
3. W. W. VanEvery, Sault Ste. Marie, Ont.
City Engineer.
3. W. E. Wagner, B.A.Sc., Toronto, Ont.
Engineer and Contractor.
2. G. H. Watt, D.L.S., Ottawa, Ont.
Dominion Land Surveyor.
3. E. Yeates, Hamilton, Ont.
Manager, Hamilton Branch, Canadian Machinery Corporation.

1900.

1. J. L. Allan, A.M. Can. Soc. C.E., Dartmouth, N.S.
Office Engineer, Dartmouth Branch Intercolonial Ry.
2. E. G. R. Ardagh, B.A.Sc., Toronto, Ont.
Asst. Professor of Applied Chemistry, University of Toronto.
3. J. A. Bain, Ottawa, Ont.
Structural Engineer, Dept. of Public Works of Canada.
3. J. H. Barley, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Electric and Manufacturing Co.
2.*M. C. Boswell, M.A., Ph.D., Toronto, Ont.
Asst. Professor of Organic Chemistry, University of Toronto.
1. L. T. Bray, D. & O.L.S., Edmonton, Alta.
District Engineer and Surveyor.
3. J. Clark, Pittsburgh, Pa.
Electrician, P. & L. E. R. R.
2. J. E. Davison, B.A.Sc., Fort William.
Engineering Staff, Canadian Northern Ry.
3. E. D. Dickinson, Schenectady, N.Y.
With General Electric Co.
3. G. W. Dickson, B.A.Sc., Grand Mere, Que.
With Laurentide Paper Co.
2.*H. A. Dixon, B.A.Sc., M.L.S., Resplendent, B.C.
District Engineer, Canadian Northern Railway.
2. C. H. Fullerton, O.L.S., New Liskeard, Ont.
Engineer and Surveyor.
3. W. S. Guest, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.
3. W. Hemphill, B.A.Sc., E.E., Buffalo, N.Y.
Superintendent, Cataract Power & Conduit Co.
3. S. E. M. Henderson, Peterboro, Ont.
Canadian General Electric Co.

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*Diploma with honours.

1900—*Continued.*

3. J. A. Henry, Schenectady, N.Y.
Designing Engineer, General Electric Co.
2. H. S. Holcroft, B.A.Sc., D.L.S., 108 St. Vincent St., Toronto, Ont.
Surveyor, Peace River District.
3. H. A. Johnson, 148 Clinton St., Toronto, Ont.
Manager, Johnson Oil Engine Co., Ltd.
3. J. C. Johnston, Boston, Mass.
Plant Inspector, Warren Bituminous Paving Co.
2.*J. A. Johnston, B.A.Sc., Ignace, Ont.
Contractor.
2. R. E. McArthur, Montreal, Que.
Const. Dept., C. P. R.
. J. G. McMillan, B.A.Sc., Box 431, New Liskeard, Ont.
Mine Inspector.
3. L. Haun Miller, Cleveland, Ohio.
Sales Agent, Bethlehem Steel Co.
2. E. V. Neelands, B.A.Sc., Cobalt, Ont.
Manager, Cobalt Comet Mines.
1.*E. H. Phillips, D.L.S., Saskatoon, Sask.
Phillips & Phillips, Civil Engineers and Surveyors.
2. J. R. Roaf, B.A.Sc., Bickerdike, Alta.
Yellow Head Pass Coal Co.
3.*C. H. E. Rounthwaite, Sault Ste. Marie, Ont.
Chief Draftsman Algoma Central & Hudson Bay Ry.
2. H. W. Saunders, B.A.Sc., Gary, W.Va.
Division Engineer, U. S. Coal & Coke Co.
1. A. Taylor, D.L.S. & M.L.S., Portage la Prairie, Man.
Engineer and Surveyor.
1. W. C. Tennant, B.A.Sc. (deceased).
2. S. M. Thorne, B.A.Sc., Cobalt, Ont.
Manager, Preston East Dome.
1. F. W. Thorold, B.A.Sc., 2 Toronto St., Toronto, Ont.
F. W. Thorold Co., Ltd., Consulting Engineers and Contractors.
1. H. M. Weir, B.A.Sc., Pachuca, Mex.
With Real Del Morte Co.
3. F. D. Withrow, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.

1901.

1. R. H. Barrett, B.A.Sc., O.L.S. (deceased).
3. W. G. Beatty, Fergus, Ont.
Manager, Beatty Bros., Implement Manufacturers.
3. G. M. Bertram, Toronto, Ont.
Business Manager, Canadian Courier.
3. W. J. Bowers (deceased).
3. E. T. J. Brandon, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Comm.
3. W. P. Brereton, B.A.Sc., Winnipeg, Man.
Assistant Engineer, Power Construction Dept.
3. J. T. Broughton, Scottdale, Pa.
Chief Engineer, Scottdale Foundry & Machine Co.
3.*W. G. Chace, B.A.Sc., Winnipeg, Man.
Smith, Kerry & Chace.

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*Diploma with honours.

1901—*Continued.*

3. A. G. CHRISTIE, Madison, Wis.
Assoc. Professor of Steam Engineering, University of Wisconsin.
3. J. R. COCKBURN, B.A.Sc., A.M. Can. Soc. C.E., . Toronto, Ont.
Asst. Professor of Descriptive Geometry, University of Toronto.
1. W. A. DUFF, Moncton, N.B.
Engineer of Bridges, Intercolonial Ry.
2.*D. E. EASON, B.A.Sc., Peterboro', Ont.
Division Engineer, Trent Valley Canal.
1.*S. GAGNE, B.A.Sc. (deceased).
3. N. R. GIBSON, B.A.Sc., Winnipeg, Man.
Assistant Engineer, Power Const. Dept.
2. A. T. E. HAMER, Wahnapitae, Ont.
Engineering Staff, Canadian Northern Ry. Co.
1. C. HARVEY, B.A.Sc., D.L.S., C.E., B.C.L.S. Kelowna, B.C.
Consulting Engineer and Surveyor.
2. F. C. JACKSON, La Tuque, Que.
Jackson & Connelly, Contractors, N. T. C. Ry.
3.*R. A. LAIDLAW, C.E. Houston, Texas.
Engineer and Sales Agent, Trussed Concrete Steel Co.
3. W. C. LUMBERS, Calgary, Alta.
Engineering Staff, C. P. R.
2. A. C. MACDOUGALL, Massena, N.Y.
Assistant Superintendent, Aluminium Co. of America.
3. A. T. C. MCMASTER, B.A.Sc., Toronto, Ont.
Engineer and Contractor.
1. G. MACMILLAN, Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
3.*H. G. MCVEAN, B.A.Sc., Moose Jaw, Sask.
Contractor and Engineer.
2. W. C. MATHESON, Joliette, Que.
With Mackenzie-Mann & Co.
3. H. T. MIDDLETON, Englewood Cliffs, N.J.
2. J. L. R. PARSONS, B.A., D.L.S., Winnipeg, Man.
Engineer and Surveyor.
1. G. H. POWER, Winnipeg, Man.
Western Canada Rep. of Willis Chipman, C.E.
3.*H. W. PRICE, B.A.Sc., Toronto, Ont.
Associate Professor of Electrical Engineering, University of Toronto.
1. H. P. RUST, B.A.Sc., A.M. Can. Soc. C.E.,
Great Western Power Co.
3. M. V. SAUER, B.A.Sc., Niagara Falls, Ont.
Assistant Engineer, Ontario Power Co.
3. W. H. STEVENSON, B.A.Sc., Monadnock Block, Chicago, Ill.
Secretary Power Plant Specialty Co.
1. R. D. WILLSON, (deceased)

1902.

3.*H. G. BARBER, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. W. J. BLAIR, B.A.Sc., D. & O.L.S., Box 643, Woodstock, Ont.
Civil Engineer and Surveyor.

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*Diploma with honours.

1902—*Continued.*

3. J. M. Brown, Pittsburgh, Pa.
With Westinghouse Machine Co., Steam Turbine Dept.
2. W. G. Campbell, Toronto, Ont.
2. A. R. Campbell, Toronto, Ont.
Universal Mfg. Co., Ltd., St. James Chambers.
3. C. G. Carmichael (deceased).
2.*W. Christie, B.A.Sc., Prince Albert, Sask.
Dominion Land Surveyor.
2. F. T. Conlon (deceased).
3. H. V. Connor, Pittsburgh, Pa.
With Westinghouse Electric and Mfg. Co.
2.*M. T. Culbert (deceased).
2. R. Cumming, 50 Front St. East, Toronto, Ont.
General Contractor.
1. W. E. Douglas, B.A., 152 Bay St., Toronto, Ont.
Contractor,
3.*R. J. Dunlop, Toronto, Ont.
With Canadian Westinghouse Co.
2. W. M. Edwards, B.A.Sc., Lethbridge, Alta.
Duff & Edwards.
3. W. Elwell (deceased).
2. J. M. Empey, B.A.Sc., O.L.S., D.L.S. Calgary, Alta.
District Engineer and Surveyor, Dept. of Public Works.
2.*D. L. H. Forbes, 306 Manning Chambers, Toronto, Ont.
Mining and Metallurgical Engineer.
1.*A. E. Gibson, B.A.Sc., Toronto, Ont.
Office of Haney & Miller, Engineers and Contractors.
3. A. C. Goodwin, Toronto, Ont.
With Hydro-Electric Power Commission.
3. C. P. Henwood, McKeesport, Pa.
Draftsman, National Tube Co.
3. D. M. Johnston, Toronto, Ont.
With Hydro-Electric Power Comm.
2. R. H. Knight, B.A.Sc., D.L.S., Edmonton, Alta.
Driscoll & Knight, Engineers and Surveyors.
5.*F. L. Langmuir, B.A.Sc., Ph.D., Toronto, Ont.
Chemist, M. Langmuir Mfg. Co.
3. A. H. McBride, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Commission.
1. A. L. McLennan, D.L.S., Toronto, Ont.
Office of York County Engineer.
3. J. T. Mackay, Toronto, Ont.
3. J. F. S. Madden, Winnipeg, Man.
Erecting Engineering Dept., Can. Gen. Electric Co.
3.*C. H. Marrs, Hamilton, Ont.
Hamilton Bridge Works.
3. P. Mathison, B.A.Sc., East Pittsburgh, Pa.
Westinghouse Electric & Manufacturing Co.
3. R. S. Mennie, Pittsburgh, Pa.
With Crucible Steel Co. of America.
2. H. H. Moore, D.L.S., A.M. Can. Soc. C.E., Calgary, Alta.
Dominion Land Surveyor and Engineer.

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*Diploma with honours.

1902—*Continued.*

1.*T. S. Nash, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. G. G. Powell, B.A.Sc., Toronto, Ont.
Assist. City Engineer.
1.*W. F. Ratz, D.L.S. (deceased).
3. H. D. Robertson, B.A.Sc., Toronto, Ont.
Miller, Cumming & Robertson, Engineers and Contractors.
3.*D. Sinclair, B.A.Sc. (deceased).
2.*I. J. Steele, D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
3. W. H. Sutherland, B.A.Sc., Montreal, Que.
Assistant Chief Engineer, Montreal Water and Power Co.
3.*T. F. Taylor, 494 Concord Ave., Toronto, Ont.
2.*C. M. Teasdale, Concord, Ont.
Surveyor.
3. A. A. Wanless, Sydney Mines, N.S.
Asst. Engineer and Shop Supt. N. S. S. & C. Co.
3. H. J. Zahn, B.A.Sc., 235 Calumet St., Detroit, Mich.

1903.

3. H. G. Acres, Toronto, Ont.
Asst. Engineer, Hydro-Electric Power Commission.
1. J. G. R. Alison, Pittsburgh, Pa.
With Riter-Conley Mfg. Co.
3.*H. H. Angus, B.A.Sc., Toronto, Ont.
Chief Engineer, Canadian Domestic Engineering Co.
3. J. A. Beatty, Peterboro', Ont
Morrow & Beatty, Contractors.
3.*J. Breslove, East Pittsburgh, Pa.
Steam Turbine Engineer, Westinghouse Machine Co.
2. J H. Burd, O., D., S. & A. L. S., C.E., Saskatoon, Sask.
Engineer and Surveyor.
1.*E. L. Burgess, D.L.S., Kamloops, B.C.
Burgess & Taggart, Surveyors and Engineers.
2. N. A. Burwash, B.A.Sc., Toronto, Ont.
Surveyor, Speight & Van Nostrand.
1. F. F. Clarke, D. &. O.L.S., A.M. Can. Soc. C.E., Toronto, Ont.
Divisional Engineer, Can. Northern Ry.
2. C. L. Coulson, Welland, Ont.
3.*A. E. Davison, B.A.Sc., Toronto, Ont.
Engineering Staff, Hydro-Electric Power Commission.
3. C. J. Fensom, B.A.Sc., M.E., Hamilton, Ont
Works Engineer, Otis-Fensom Elevator Co
2.*E. O. Fuce, O.L.S., Calgary, Alta.
Fuce & Scott, Consulting Civil Engineers.
3.*F. A. Gaby, B.A.Sc., Toronto, Ont.
Chief Engineer, Hydro-Electric Power Commission.
1. J. C. Gardner, B.A.Sc., Niagara Falls, Ont.
Consulting Engineer.
3. R. E. George, Dover, N.H.
Electrical and Gas Engineer, The United Gas & Electric Co.

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*Diploma with honours.

1903—*Continued.*

1.*P. GILLESPIE, B.A.Sc., Toronto, Ont.
Associate Professor of Applied Mechanics, University of Toronto.
1. W. A. GOURLAY, Toronto, Ont.
Engineering Staff, C. P. R.
2. J. F. HAMILTON, B.A.Sc., C.E., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.
2. G. S. HANES, B.A.Sc., O.L.S., North Vancouver, B.C.
Mayor.
2. F. Y. HARCOURT, B.A., Port Arthur, Ont.
Engineer, Public Works Dept.
1. L. J. HAYES, Chicago, Ill.
Structural Engineer, Corn Products Refining Co.
1.*F. D. HENDERSON, Secy. Board of Examiners for D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
5.*J. A. HORTON,
3. J. G. JACKSON, 98 Frontenac St., Kingston, Ont.
3. G. K. JOHNSTON, Pefferlaw, Ont.
Merchant.
1. H. JOHNSTON, O.L.S., Berlin, Ont.
City Engineer.
3. A. G. LANG, Toronto, Ont.
Underground Superintendent, Toronto Hydro-Electric System.
1.*A. J. LATORNELL, B.A.Sc., Edmonton, Alta.
City Engineer.
1.*H. J. MCAUSLAN, B.A.Sc., O.L.S., North Bay, Ont.
Staff of T. & N. O. Ry.
3. J. A. MCFARLANE, B.A.Sc., Hamilton, Ont.
Chief Draftsman, Hamilton Bridge Works Co.
1.*A. L. MCNAUGHTON, Prince Rupert, B.C.
With G. T. P. Co.
5.*F. G. MARRIOTT, B.A.Sc., Toronto, Ont.
Chemist and Supt. Asphalt Plant, City Testing Laboratory.
3.*C. A. MAUS, Paris, Ont.
3.*M. L. MILLER, Pittsburgh, Pa.
Draftsman, McClintic-Marshall Construction Co.
3. P. H. MITCHELL, Toronto, Ont.
Consulting Electrical Engineer, Traders Bank Building.
2.*R. H. MONTGOMERY, B.A.Sc., O. and D.L.S., Prince Albert, Sask.
Engineer and Surveyor.
1. F. A. MOORE, Winnipeg, Man.
Engineering Dept. C. N. Ry.
3. E. E. MULLINS, Port Limon, Costa Rica.
Supt. Motive Power, Northern Ry. Co.
3. I. H. NEVITT, B.A.Sc., Toronto, Ont.
Asst. Engineer, Main Drainage Dept., City Hall.
1. E. W. OLIVER, B.A.Sc., C.E., Toronto, Ont.
Assistant to Chief Engineer, Canadian Northern Ry. System.
3. J. P. OLIVER, Arabia, La.
Supt. of Construction, The American Sugar Refining Co.
3. J. D. PACE, B.A.Sc.,
3. B. B. PATTEN, B.A.Sc., St. Catharines, Ont.
Rutherford & Patten, Engineers and Surveyors.

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*Diploma with honours.

1903—*Continued.*

2. D. H. PHILP, Ottawa, Ont.
Georgian Bay Canal Survey.
3.*D. H. PINKNEY, Elyria, O.
National Tube Dept., U. S. Steel Corporation.
2. T. H. PLUNKETT, B.A.Sc., Meaford, Ont.
Dominion Land Surveyor.
1. D. F. ROBERTSON, D.L.S., Ottawa, Ont.
3.*H. M. SCHEIBE, B.A.Sc., 10 Adelaide Rd., Somerville, Mass.
Supt., E. F. Delisle Co.
1.*H. L. SEYMOUR, B.A.Sc., Edmonton, Alta.
Sanders & Seymour, Civil Engineers and Dominion Land Surveyors.
1. J. H. SMITH, D. & O.L.S., 140 Jasper Ave. West, Edmonton, Alta.
Engineer and Surveyor.
3. H. G. SMITH, B.A.Sc. (deceased).
3. S. L. TREES, B.A.Sc., Whitby, Ont.
Manager, Samuel Trees & Co.
2. J. E. UMBACH, Victoria, B.C.
Chief Draftsman, Lands Dept., Department of the Interior.
1. J. WALDRON, D.L.S., Moose Jaw, Sask.
Engineer and Surveyor.
3.*S. B. WASS, Fredericton, N.B.
Supt. St. John & Quebec R.R.
3. J. A. WHELIHAN, Box 165, Regina, Sask.
3. H. F. WHITE, London, Ont.
Assistant Superintendent, The Geo. White & Sons. Co., Ltd.
2.*C. G. WILLIAMS, B.A.Sc., Porcupine, Ont.
Hollinger Mine.
1.*N. D. WILSON, B.A.Sc., Toronto. Ont.
Toronto Harbour Commission.
1.*C. R. YOUNG, B.A.Sc., Mem. Can. Soc. C.E., Toronto, Ont.
Asst. Professor in Structural Engineering, University of Toronto.

1904.

3.*J. H. ALEXANDER, B.A., C.E., A. M. Am. Soc. C.E.,
Engineer and Contractor. Winnipeg, Man.
3.*J. H. BARRETT, Toronto, Ont.
With the Wm. Davies Co., Ltd.
3. M. B. BONNELL, Ottawa, Ont.
Dept. of Agriculture.
3. T. D. BROWN, B.A.Sc., Calgary, Alta.
Canadian Fairbanks Co.
1. R. J. BURLEY, Ottawa, Ont.
Dept. of the Interior.
3. F. W. BURNHAM, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. J. W. CALDER, B.A.Sc., Fort William, Ont.
With Hydro-Electric Commission.
1. N. C. CAMERON, 4172 Dorchester St., Montreal, Que.
Dominion Engineering and Construction Co.
1. A. J. CAMPBELL, B.A.Sc., Collingwood, Ont.
3.*A. M. CAMPBELL, B.A.Sc., Chilliwack, B.C.
4. J. B. CHALLIES, Ottawa, Ont.
Supt., Water Power Branch, Department of the Interior.
2. C. A. CHILVER, Walkerton, Ont.

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*Diploma with honours.

1904—*Continued.*

2. H. L. CHILVER, *Assistant City Engineer.*	Windsor, Ont.
1. U. W. CHRISTIE, B.A.Sc., O.L.S., *Astronomical Surveys Branch, Dept. of the Interior.*	Ottawa, Ont.
2. P. C. COATES, B.A.Sc., *D. and B. C. Land Surveyor.*	Victoria, B.C.
1. S. B. CODE, O.L.S., *Civil Engineer and Land Surveyor.*	Smith's Falls, Ont.
1.*T. F. CODE, B.A.Sc. (deceased).	
1.*W. A. COWAN, *Resident Engineer, C. P. R.*	Brownville Jct., Maine
3.*S. E. CRAIG, B.A.Sc.,	Snelgrove, Ont.
1.*S. R. CRERAR, B.A.Sc., O.L.S., *Lecturer in Surveying, University of Toronto.*	Toronto, Ont.
3. W. M. CURRIE, *Managing Director, Canada Steel Co., Ltd.*	Hamilton, Ont.
3. H. H. DEPEW, *Supt. Crow's Nest Pass Electric Light and Power Co.*	Fernie, B.C.
2. A. J. ELDER, *Topographical Surveys Branch, Department of the Interior.*	Ottawa, Ont.
2. J. G. FLECK, *Fleck Bros., Ltd.*	Vancouver, B.C.
1.*A. L. FORD, B.A.Sc., *Government Inspector, Dept. of Railways and Canals.*	Prince Rupert, B.C.
3. W. S. GIBSON, B.A.Sc.,	38 Park Rd., Toronto, Ont.
1. J. N. GOODALL, *Engineer, Niagara and Ontario Construction Co.*	Toronto, Ont.
1. J. P. GORDON, *Engineering Staff, Willis Chipman, C.E.*	Box 266, Dauphin, Man.
3. W. W. GRAY, B.A.Sc., *Engineer, Edmonton Light and Power Co.*	Edmonton, Alta.
1. A. GRAY, B.A.Sc., *With St. Lawrence Starch Co.*	Port Credit, Ont.
3. W. K. GREENWOOD, B.A.Sc., *Town Engineer.*	Orillia, Ont.
1. L. D. HARA, *Assistant Engineer, Welland Canal Co.*	St. Catharines, Ont.
3. C. J. HARRIS, B.A.Sc., *With Brantford Screw Co.*	Brantford, Ont.
1. J. B. HERON, B.A.Sc., c.o. *S. H. Sykes, 1577 Danforth Ave.*	Toronto, Ont.
1. E. M. M. HILL, *Engineering Dept. Canadian Northern Railway.*	Edmonton, Alta.
2. S. N. HILL, *Topographical Surveys Branch, Department of the Interior.*	325 Waverly St., Ottawa, Ont.
2. C. J. INGLES, *With Ontario Power Co.*	Niagara Falls, Ont.
1. E. A. JAMES, B.A.Sc., *Engineer, York County Highway Commission.*	Toronto, Ont.
1. P. V. JERMYN, B.A.Sc., *C. P. R. Construction Department.*	118 King St. West, Toronto, Ont.
3. W. S. H. KEEFE, *Manager, Light, Heat and Power Co.*	Fort Covington, N.Y.
3. W. J. LARKWORTHY (deceased).	

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*Diploma with honours.

1904—*Continued.*

3. O. B. McCuaig, B.A.Sc., Wenatchee, Wash.
General Supt., Wenatchee Valley Gas and Electric Co.
1. G. G. McEwen, B.A.Sc., Winchester, Ont.
Office of T. H. Dunn, O.L.S.
1.*W. G. McFarlane, B.A., B.A.Sc., 55 Elliott St., Toronto, Ont.
Engineer and Surveyor, Peace River Dist.
3.*C. P. McGibbon, B.A., Hamilton, Ont.
Canadian Westinghouse Co.
3. C. McKay, B.A.Sc. (deceased).
1. D. McMillan, Edmonton, Alta.
With C.N.R.
3. G. J. Manson, Penetang, Ont.
Engineer, Grenville Board Co.
1.*W. N. Moorhouse, Toronto, Ont.
Office of Sproatt & Rolph, Architects.
3. E. E. Moore, Glen Falls, N.Y.
Engineer, Inter-State Iron Co.
3. W. H. Munro, Peterboro, Ont.
With Peterborough Radial Ry.
3. G. Pace, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. W. S. Pardoe, B.A.Sc., Philadelphia, Pa.
Asst. Prof. in Civil Engineering, University of Pennsylvania.
3. J. Paris, La Tuque, Que.
Resident Engineer, Transcontinental Ry.
1. J. Parke, B.A.Sc., Havilah, Ont.
Chemist and Assayer.
3. W. J. Peaker, Ottawa, Ont.
Topographical Surveys Branch, Dept. of the Interior.
3.* A. E. Pickering, Sault Ste. Marie, Ont.
Manager, Tagona Light and Power Co.
1. D. L. C. Raymond, B.A.Sc., Toronto, Ont.
The Bishop Construction Co., Ltd.
1. F. B. Reid, B.A.Sc., Ottawa, Ont.
Astronomical Surveys Branch, Dept. of the Interior.
3.*M. R. Riddell, B.A.Sc., 86 Spadina Rd., Toronto, Ont.
1. L. H. Robinson, Sioux Lookout, Ont.
T. and N.O. Ry.
3. G. S. Roxburgh, B.A.Sc., Winnipeg, Man.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
2. F. N. Rutherford, B.A.Sc., St. Catharines, Ont.
Rutherford and Patten, Surveyors and Engineers.
1.*J. D. Sheply, B.A.Sc., D.L.S. N. Battleford, Sask.
District Surveyor and Engineer.
3. F. W. Slater, B.A.Sc., Schenectady, N.Y.
With General Electric Co.
3.*R. S. Smart, Ottawa, Ont.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. D. A. Smith, B.A.Sc., D. & S. L. S., Regina, Sask.
Smith & Phillips, Civil Engineers.
3. W. J. Smither, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
3. S. E. Thomson, B.A.Sc., Niagara Falls, Ont.
Engineering Staff, Electrical Development Co.

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*Diploma with honours.

1904—*Continued.*

3. C. J. TOWNSEND, B.A.Sc., Chicago, Ill.
Mechanical Engineer, Liquid Carbonic Co.
1. D. T. TOWNSEND, B.A.Sc., O.L.S., Calgary, A ta.
Chief Surveyor, Dept. of Natural Resources, C.P.R.
1. A. V. TRIMBLE, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.
3. B. B. TUCKER, B.A.Sc., Morrisburg, Ont.
Resident Engineer, New York and Ontario Power Co.
2.*E. WADE, B.A., Welland, Ont.
Builder.
1.*E. W. WALKER, B.A.Sc. (deceased).
3. J. P. WATSON, B.A.Sc., Montreal, Que.
With the St. Lawrence Bridge Co. Ltd.
1. J. M. WEIR, Toronto, Ont.
Sec.-Treasurer, The Toronto Plate Glass Importing Co., Ltd.
1.*A. F. WELLS, O.L.S., B.A.Sc., Toronto, Ont.
Wells & Gray, Ltd., Engineers and Contractors.
1. W. R. WORTHINGTON, B.A.Sc., Toronto, Ont.
Assistant Sewer Engineer, Staff of City Engineer.
3. W. F. WRIGHT, Toronto, Ont.
Manager, Motor Sales Dept., Canadian General Electric Co.

1905.

2. H. W. ARENS (deceased).
3. R. H. ARMOUR, 165 Broadway, New York.
Westinghouse Electric & Manufacturing Co.
3.*C. B. AYLESWORTH, Hamilton, Ont.
Draftsman, Canadian Westinghouse Co.
1.*W. BARBER, B.A.Sc., Toronto, Ont.
Engineer, Waterworks Department, City Hall.
2.*W. A. BEGG, B.A.Sc., Regina, Sask.
Department of Public Works.
3.*G. G. BELL, 5 Walker St., Portland, Maine.
1. J. C. BOECKH, Toronto, Ont.
With Boeckh Brush Co.
3. W. M. BRISTOL, Halifax, N.S.
Canadian Westinghouse Co.
2. W. C. CAMPBELL, Keene, Ont.
Mining Engineer.
3. W. R. CARSON, Cleveland, O.
Engineering Dept., Grasselli Chemical Co.
1. A. V. CHASE, Ottawa, Ont.
Dept. of the Interior.
3. S. R. A. CLEMENT, Toronto, Ont.
With Hydro-Electric Power Commission.
3. T. E. CORRIGAN, Bodie, Cal.
Chief Electrician, Standard Consolidated Mining Co.
1.*N. L. R. CROSBY, B.A.Sc., Toronto, Ont.
Contracting Engineer, Toronto Structural Steel Co.
1. G. H. FERGUSON, B.A.Sc., Ottawa, Ont.
Assistant Engineer, Commission of Conservation.
3. H. S. FIERHELLER, B.A.Sc. (deceased).

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*Diploma with honours.

1905—*Continued.*

3. F. H. Harrison, 320 Fifth Ave., New York, N.Y.
Engineer, H. D. Best Co.
1. M. C. Hendry, B.A.Sc., Toronto, Ont.
2. C. S. L. Hertzberg, Toronto, Ont.
James, Loudon & Hertzberg.
3.*W. G. Hewson, B.A.Sc., Niagara Falls, Ont.
1. G. S. Jones, Smith's Falls, Ont.
3.*G. Kribs, Dallas, Texas.
Texas Power and Light Co.
2. P. A. Laing, Cochrane, Ont.
Resident Engineer, T. C. Ry.
1. A. Latornell, B.A.Sc., Toronto, Ont.
Sewer Department, City Hall.
3. J. W. Leighton, Toronto, Ont.
President, Leighton-Jackes Mfg. Co.
1.*T. R. Loudon, B.A.Sc., Toronto, Ont.
Lecturer in Metallurgy, University of Toronto.
3. S. E. McGorman, Walkerville, Ont.
Asst. Engineer, Canadian Bridge Co.
1.*W. W. McGregor (deceased).
2. D. W. McKenzie, Winnipeg, Man.
Draftsman, Engineering Dept. C.N. Ry.
3.*C. A. McLean. Toronto, Ont.
Canadian Westinghouse Co.
2. W. N. McLean, Erin, Ont.
3. F. G. Mace, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.
3. R. W. Moffatt, B.A.Sc., Winnipeg, Man.
University of Manitoba.
3. L. W. Morden, Toronto, Ont.
Canadian Westinghouse Co.
3. G. R. Munro, B.A.Sc., 405 Dorchester St. W., Montreal, Que.
Assistant to R. S. Lea.
3.*W. G. Nicklin, B.A.Sc., Grand Rapids, Mich.
Assistant Superintendent, Dalnu & Kiefer Tanning Co.
1. E. D. O'Brien, Nipigon, Ont.
With Transcontinental Ry.
1.*B. B. Patten, B.A.Sc., St. Catharines, Ont.
Rutherford & Patten, Surveyors and Engineers.
1. E. P. A. Phillips, B.A.Sc., O.L.S., Port Arthur, Ont.
City Engineer's Dept.
1. W. B. Porte, Oakville, Ont.
2. E. F. Pullen, Iroquois Falls, Ont.
Manager, Alexo Mine.
2. G. L. Ramsey, B.A.Sc., Sault Ste. Marie, Ont.
Ontario Land Surveyor.
1. G. W. Rayner, Havelock, Ont.
Ontario Rock Co.
3.*R. B. Ross (deceased).
5. T. E. Rothwell, B.A.Sc., Toronto, Ont.
Provincial Assay Office.
2.*G. S. Scott, 26 Howard St., Toronto, Ont.
3. H. V. Serson, New York, N.Y.
Engineer, Snare & Triest Co., Limited.
3. C. H. Shirriff, B.A.Sc., Toronto, Ont.
Chemist, Imperial Extract Co.

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*Diploma with honours.

1905—*Continued.*

3.*C. E. Sisson, Peterboro', Ont.
Canadian Gen. Electric Co.
1. D. L. N. Stewart, B.A.Sc., Fort Frances, Ont.
Road Engineer, Ont. Government.
1. M. A. Stewart, Toronto, Ont.
Assistant City Engineer, Roadway Dept., City Hall.
3.*W. F. Stubbs, Galt, Ont.
Assistant Engineer, Goldie & McCulloch Co.
1. N. H. Sturdy, Cleveland, Ohio.
Designer, L. S. & M. S. Ry.
1. W. G. Swan, B.A.Sc., Langley, B.C.
Divisional Engineer, C.N. Ry.
1.*F. H. Sykes, O.L.S., D.L.S., Toronto, Ont.
City Architect's Dept., City Hall.
3. L. R. Thomson, B.A.Sc., Montreal, Que.
With Dominion Bridge Co.
3. E. D. Tillson, B.A.Sc., Hotel Albert, New York, N.Y.
1.*J. J. Traill, B.A.Sc., Toronto, Ont.
Lecturer in Mechanical Engineering, University of Toronto.
1.*W. M. Treadgold, B.A., Toronto, Ont.
Asst. Professor in Surveying, University of Toronto.
3. W. E. Turner, B.A.Sc., Salt Lake City, Utah.
With Utah Light & Ry. Co.
3. A. E. Uren, Toronto, Ont.
Editor, Acton Publishing Co.
3. J. M. Vaughan. 58 Melville Ave., Toronto, Ont.
Contractor.
1. H. L. Wagner, B.A.Sc., Toronto, Ont.
Chief Draftsman, Toronto Structural Steel Co., Ltd.
2. W. H. Young, B.A.Sc., D.L.S., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.

1906.

1. F. Alport, B.A.Sc.,
3.*W. L. Amos, Guelph, Ont.
Hydro-Electric Power Commission.
1. A. H. Arens, Inverness, N.S.
Resident Engineer, Inverness Ry, & Coal Co.
3.*J. C. Armer, B.A.Sc., Toronto, Ont.
Secretary Treasurer Commercial Press, and Manager of the Canadian Manufacturer Publishing Co., Ltd.
1. M. H. Baker, B.A.Sc., St. Thomas, Ont.
City Engineer.
3. F. W. Baldwin, Hammondsport, N.Y.
With Graham Bell, Esq.
2. E. W. Banting, B.A.Sc., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
3. F. Barber, B.A., 57 Adelaide St. East, Toronto, Ont.
York County Engineer.
2. M. Bates, B.A.Sc. (deceased).
2. J. P. Bellisle (deceased).
3.*H. H. Betts, B.A.Sc., Rio de Janeiro, Brazil.
Rio de Janeiro Tramway, Light & Power Co.

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*Diploma with honours.

1906—*Continued.*

5.*D. E. BEYNON, B.A.Sc., Toronto, Ont.
General Supt., Dunlop Tire and Rubber Goods Co.
2. G. W. BISSETT, Naughton, Ont.
Mill Supt., Canadian Exploration Co., Ltd.
3. W. C. BLACKWOOD, B.A.Sc., Toronto, Ont.
Instructor, Technical High School.
3. H. E. BRANDON, B.A.Sc., Winnipeg, Man.
Chief Engineer, Vulcan Iron Works.
1. M. E. BRIAN, B.A.Sc., O.L.S., A.M. Can. Soc. C.E., Windsor, Ont.
City Engineer.
2. F. C. BROADFOOT, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.
2. T. W. BROWN, B.A.Sc., D., S. & A.L.S., A.M. Can. Soc., C.E., Saskatoon, Sask.
Brown & Loucks, Civil Engineers.
1.*A. E. K. BUNNELL, B.A.Sc., Brantford, Ont.
Engineer, Lake Erie and Northern R.R.
3. F. M. BYAM, Toronto, Ont.
Chief Engineer, McGregor and McIntyre.
3. A. CAMERON, Winnipeg, Man.
With the Vulcan Iron Works.
3. A. W. CAMPBELL, B.A.Sc., Toronto, Ont.
Inspector, Hydro-Electric Power Commission.
1. M. J. CARROLL, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
3.*R. E. C. CHADWICK, Montreal, Que.
Manager, The Foundation Co., Ltd., of New York.
1.*G. T. CLARK, B.A., Saskatoon, Sask.
City Engineer.
3.*G. A. COLHOUN, Hamilton, Ont.
Draftsman, The Hamilton Bridge Works Co., Ltd.
1.*W. A. M. COOK, B.A.Sc., Toronto, Ont.
Staff of City Architect, City Hall.
1.*E. L. COUSINS, B.A.Sc., Toronto, Ont.
Engineer, Harbour Commission.
4. A. G. CREIGHTON, Prince Albert, Sask.
Creighton & Strothers, Architects and Structural Engineers.
4. W. N. DANIELS, 1215 Filbert St., Philadelphia, Pa.
With John. R. Wiggins & Co.
3.*N. P. F. DEATH, B.A.Sc., 25 Jarvis St., Toronto, Ont.
Death & Watson, Electrical Engineers and Contractors.
3. C. S. DUNDASS, B.A.Sc., Lachine, Que.
With Dominion Bridge Co.
3. S. L. FEAR, Amherstburg, Ont.
With Dunbar, Sullivan Dredging Co.
5.*C. C. FORWARD, Ottawa, Ont.
Laboratory of the Inland Revenue Department.
5. C. W. GRAHAM, B.A.Sc., Toronto, Ont.
Chemist, Dunlop Tire Co.
1.*P. W. GREENE, 161 Admiral Road, Toronto, Ont.
3. C. B. HAMILTON, B.A.Sc., 43 Madison Ave., Toronto, Ont.
Manager, Hamilton Gear and Machinery Co.
1.*A. L. HARKNESS, B.A.Sc., Montreal, Que.
St. Lawrence Bridge Co., Ltd.

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*Diploma with honours.

1906—*Continued.*

1.*R. L. Harrison, Cobourg, Ont.
Resident Engineer, Canadian Northern Ry.
1. E. Harrison, B.A.Sc., Calgary, Alta.
Harrison & Ponton, Civil and Mining Engineers.
3. J. C. Hartney, B.A.Sc., Vancouver, B.C.
Engineer & Salesman, Canadian Westinghouse Co.
1. S. Hett, B.A.Sc., LePas, Man.
Locating Engineer of the Hudson Bay Ry.
3. C. R. Hillis, Toronto, Ont.
With Toronto & Niagara Power Co.
3. C. W. Hookway, B.A.Sc., Winnipeg, Man.
Allis-Chalmers-Bullock Co.
3. R. H. Hopkins, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.
1.*R. S. Houston, Winnipeg, Man.
With the Vulcan Iron Works.
2.*W. Huber, Toronto, Ont.
With York County Highway Commission.
3.*A. H. Hull, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
3. W. C. Jepson, Niagara Falls, Ont.
Welland Canal Office.
1.*C. Johnston, B.A.Sc., Toronto, Ont.
District Engineer, Canadian Northern Ry.
1. G. R. Jones, B.A.Sc., China.
Missionary.
3. T. Jones, B.A.Sc., Toronto, Ont.
Engineer, Canadian Brake Shoe Co.
1.*A. E. Jupp, B.A.Sc., 165 Bolton Ave., Toronto, Ont.
3. J. D. Keppy, 50 Pearl St., Toronto, Ont.
Mechanical Engineer.
1. J. L. Lang, B.A.Sc., D. & O.L.S., Sault Ste. Marie, Ont.
Lang & Keys, Engineers and Surveyors.
3. A. P. Linton, B.A.Sc., Regina, Sask.
Dept. Public Works.
4.*A. Wellesley McConnell, B.A.Sc., Toronto, Ont.
Lecturer in Architectural Design, University of Toronto.
3.*D. G. McIlwraith, Galt, Ont.
Draftsman, The Goldie & McCulloch Co., Ltd.
2. J. A. McKenzie, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.
1.*J. V. McNab, Moose Jaw, Sask.
Resident Engineer, C.P.R.
3. J. A. McPherson, Toronto, Ont.
2. K. A. MacKenzie, B.A.Sc., Ft. George, B.C.
K. A. MacKenzie & Co., Ltd.
1. W. C. MacKinnon, Lachine, P.Q.
Dominion Bridge Co.
3.*W. Maclachlan, B.A.Sc., Belleville, Ont.
Local Manager, Trenton Electric and Water Co.
3.*D. W. Marrs, Pittsburgh, Pa.
Designer and Estimator, Riter-Conley Mfg, Co.

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*Diploma with honours.

1906—*Continued.*

3. W. A. Maxwell, Walkerville, Ont.
Draftsman, Canadian Bridge Co.
1.*Rev. J. Mellon Menzies, B.A.Sc., D.L.S., Wu An Hsien, North Honan, China.
Missionary.
3. L. R. Miller, B.A.Sc., Watrous, Sask.
Supt., Electric Light, Power and Traction Co
1.*B. F. Mitchell, B.A.Sc., Edmonton, Alta.
Municipal Engineer.
1. F. F. Montague, 506 Union Bank Bldg., Winnipeg, Man.
1.*W. J. Moore, O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.
1. C. R. Murdock, B.A.Sc., Winnipeg, Man.
Resident Engineer, Chipman and Power.
2. C. J. Murphy, B.A.Sc., Fernie, B.C.
Chief Engineer, Crow's Nest Pass Coal Co.
1.*W. P. Near, B.A., B.A.Sc., St. Catharines, Ont.
City Engineer.
2. R. Neelands, Port Hammond, B.C.
3. D. G. Park, B.A.Sc., 92 Arlington St., Winnipeg, Man.
Engineer, Waldron Co., Ltd., Heating Engineers.
3. G. W. Paterson, Vancouver, B.C.
Salesman, Canadian Financiers, Ltd.
5. R. E. Pettingill, Port Colborne, Ont.
Chief Chemist, Canada Cement Co.
2.*R. C. Purser, B.A.Sc., Windsor, Ont.
3. N. R. Robertson, B.A.Sc., Walkerton, Ont.
1. J. O. Roddick, B.A.Sc., Toronto, Ont.
Assistant Engineer, Dept. of Public Works of Canada.
1. C. H. Rogers, B.A.Sc., Peterboro', Ont.
Peterboro' Canoe Co.
2.*O. Rolfson, B.A.Sc., D.L.S., Box 378, Walkerville, Ont.
1. R. C. Ross, B.A.Sc., Ottawa, Ont.
Department of the Interior.
1. K. G. Ross, Sault Ste. Marie, Ont.
Lang & Ross, Engineers and Surveyors.
1.*H. T. Routly, O.L.S., D.L.S., Haileybury, Ont.
Routly & Summers, Engineers and Surveyors.
2. J. H. Ryckman, Toronto, Ont.
Railway and Bridge Dept., City Hall.
3.*W. K. Sanders, 58 Webster St., West Newton, Mass.
1.*W. A. Scott, B.A.Sc., D.L.S., Galt, Ont.
Dominion Land Surveyor.
1.*W. M. Stewart, B.A.Sc., 142 Aberdeen Ave., Hamilton, Ont.
2. J. E. Thomson, B.A.Sc., W. Virginia, U.S.A.
With Sterling Coal Co.
3.*C. L. Vickery, 85 Barlow St., Fall River, Mass.
Chief Engineer, American Thread Co.
5. W. E. Wickett (deceased).
3.*J. N. Wilson, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Comm.
3.*E. M. Wood, B.A.Sc., 136 Lee Ave., Toronto, Ont.
Engineering Dept., Canadian General Electric Co., Ltd.

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*Diploma with honours.

1907.

3.*F. G. Allen, B.A.Sc., Hyde Park, Mass.
Assistant to Chief Engineer, B. F. Sturtevant Co.
1. F. J. Anderson, B.A.Sc., Niagara Falls, Ont.
1. A. P. Augustine, Vancouver, B.C.
B.C. Land Surveyor.
3.* H. D. Bowman, B.A.Sc., 509 Ontario St., London, Ont.
3. W. S. Brady, B.A.Sc., 579 Euclid Ave., Toronto, Ont.
1. G. H. Broughton, Penticton, B.C.
Manager, People's Trust Co.
1. J. A. Brown, B.A.Sc., Porcupine, Ont.
With Routly & Summers.
1. C. E. Bush, B.A.Sc., 156 Geoffrey St., Toronto, Ont.
Civil Engineer and Surveyor.
3. J. H. Caster, Toronto, Ont.
Toronto Hydro-Electric System.
1.*E. Cavell, Toronto, Ont.
1.*C. B. B. Connell, Glasgow, Scotland.
With Mirrless & Watson.
3.*G. C. Cowper, B.A.Sc., Welland, Ont.
Topographical Surveys in Sask.
2. J. V. Culbert, B.A.Sc., Cobalt, Ont.
Buffalo Mines
3.*R. S. Davis, B.A.Sc., Calgary, Alta.
Sales Engineer, Canadian Westinghouse Co.
3. S. D. Evans, B.A.Sc., Leamington, Ont.
3.*F. R. Ewart, B.A.Sc., 44 Sussex Ave., Toronto, Ont.
Toronto Hydro-Electric System.
1. G. R. S. Fleming, Toronto, Ont.
With the Atwell Fleming Printing Co.
6. P. C. Fux, B.A.Sc., Brantford, Ont.
With Waterous Engine Works Co.
1. J. S. Galletly, B.A.Sc., Brooklin, Ont.
2. G. Galt, B.A.Sc., Cobalt, Ont.
Mine Supt., Cobalt Comet Mine.
1. A. B. Garrow, B.A.Sc., Toronto, Ont.
Assistant Engineer, Main Drainage Dept., City Hall.
1. A. Gillies, B.A.Sc., Minnedosa, Man.
1. G. W. Graham, Eugenia, Ont.
3. C. S. Grasett, B.A.Sc., 8 Harbord, St., Toronto, Ont.
1.*R. E. W. Hagarty, B.A.Sc., Calgary, Alta.
Trussed Concrete Steel Co.
3. K. Hall, B.A.Sc., Edmonton, Alta.
Asst. Engineer, C.P.R.
1. C. T. Hamilton, B.A.Sc., Niagara Falls, Ont.
With Ontario Power Co.
3. R. A. Hare, St. Catharines, Ont.
With Canadian Crocker Wheeler Co.
3.*H. O. Hill, B.A.Sc., Pittsburgh, Pa.
With Riter-Conley Mfg. Co.
1.*T. H. Hogg, B.A.Sc., Toronto, Ont.
Asst. Engineer, Hydro-Electric Power Comm.
3.*C. H. Hutton, B.A.Sc., Hamilton, Ont.
Engineering Staff, Dominion Power Co.
1. H. M. Hyland, B.A.Sc., 75 St. Mary St., Toronto, Ont.

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*Diploma with honours.

1907—*Continued.*

3. E. W. Hyman, B.A.Sc., London, Ont.
Assistant Superintendent, London Electric Co.

3.*L. G. Ireland, B.A.Sc., Brantford, Ont.
Supt., Hydro-Electric Power Comm.

1.*W. Jackson, B.A.Sc., Niagara Falls, Ont.
Field Engineer, Ontario Power Co.

4.*C. B. Jackson, Kenilworth, Ill.
Estimating Department, C. Everett Clark Co.

3.*E. W. Kay, B.A.Sc., Winnipeg, Man.
Asst. Manager, Reinforced Brickwork Co., Ltd.

3. D. F. Keith, Toronto, Ont.
Secretary, Keiths Limited.

1. H. P. Keith, Edmonton, Alta.
Smith & Keith, Alta. Land Surveyors and Engineers.

1. A. A. Kinghorn, B.A.Sc., Toronto, Ont.
Manager, Asphaltic Concrete Co. of Toronto, Ltd.

1. L. W. Klingner, Smith's Falls, Ont.
Resident Engineer, C.P.R.

1.*F. C. Lamb, B.A.Sc., North Battleford, Sask.
Department of Public Works.

3. A. D. LePan, B.A.Sc., Toronto, Ont.
Assistant Superintendent of Buildings and Grounds, University of Toronto.

1. J. H. Lindsay, S. & D. L. S., Prince Albert, Sask.
Dist. Surveyor and Engineer, Public Works Dept.

3. J. A. D. McCurdy, Hammondsport, N.Y.
With Graham Bell, Esq.

1.*J. B. McFarlane, B.A.Sc., 60 Lonsdale Rd., Toronto, Ont.
Dominion Land Surveyor.

3.*D. J. McGugan, B.A.Sc., New Westminster, B.C.
Burnett & McGugan.

3. A. H. McIntosh, Chicago, Ill.
With Illinois Steel Co.

3. F. W. McNeill, B.A.Sc., Peterboro', Ont.
Canadian General Electric Co.

1.*M. K. McQuarrie, Revelstoke, B.C.
Resident Engineer, C.P. Ry. Co.

1.*G. Macleod, Montreal, P.Q.

1. A. G. Mackay, New York, N.Y.
With Hudson & Manhattan Ry. Co.

1. W. S. Malcolmson, B.A.Sc., 163 Havelock Street Toronto Ont.
Engineer and Surveyor.

3. S. A. Marshall, Snelgrove, Ont.

6. D. H. C. Mason, B.A.Sc., Toronto, Ont.
Akers, Mason & Bonnington, Chemical Engineers.

1. J. W. Melson, B.A.Sc., Toronto, Ont.
Roadways Department, City Hall.

1. G. G. Mills, B.A.Sc., 89 Glen Rd., Toronto, Ont.
Mills Bros.

3. J. B. Minns, B.A.Sc., Winnipeg, Man.
Sales Engineer, Canadian General Electric Co.

4.*G. N. Molesworth, 2 College St., Toronto, Ont.
Architect.

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*Diploma with honours.

1907—*Continued.*

1. J. M. Moore, B.A.Sc., London, Ont.
With McClary Mfg. Co.
5.*P. F. Morley, Toronto, Ont.
Meteorological Office.
1. E. W. Murray, B.A.Sc., Regina, Sask.
Dept. of Public Works.
3. J. D. Murray. Toronto, Ont.
With Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. E. W. Neelands, B.A.Sc., New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. R. E. K. Neelands, B.A.Sc., Brampton, Ont.
2.*B. Neilly, B.A.Sc., Cobalt, Ont.
Manager, Penn-Canadian Mines.
1. A. E. Nourse, B.A.Sc., Toronto, Ont.
3. J. J. O'Sullivan, Toronto, Ont.
With Canada Railway News Co.
2. T. K. Paton, Wardner, Ida.
Mining Engineer.
1. F. W. Paulin, O.L.S., Niagara Falls, Ont.
Civil Engineer.
1. R. B. Potter, B.A.Sc., Toronto, Ont.
Asst. Engineer, Roadways Dept., City Hall.
3.*F. E. Prochnow, B.A.Sc., Buffalo, N.Y.
With Wilhelm, Parker & Ward, Patent Attorneys.
3.*J. F. Procunier, Bayham, Ont.
3. G. E. Quance, B.A.Sc., Delhi, Ont.
Secy.-Treas. of the Delhi Light & Power Co., Ltd.
3.*H. Raine, Toronto, Ont.
With Prack & Perrine, Architects and Engineers.
1.*J. L. Rannie, B.A.Sc., Ottawa, Ont.
Observer, Geodetic Survey.
3. C. W. B. Richardson, B.A.Sc., Montreal, Que.
Dominion Bridge Co.
1. A. A. Ridler, Toronto, Ont.
Supt. Constructing & Paving Co., Ltd.
5. H. E. Rothwell, 626 Cary Ave., West New Brighton, N.Y.
Assistant Chemist, Standard Varnish Works.
5. C. A. Schofield, Buffalo, N.Y.
Chemist, Schoell-Kopf-Hartford & Hanna Co.
1.*A. C. T. Sheppard, Ottawa, Ont.
Asst. Topographer, Geological Survey.
1. F. R. Smith, B.A., Gowganda, Ont.
Manager, Can. Gowganda Silver Mines.
3. E. R. Smithrim, B.A.Sc., Watrous, Sask.
Supt., Watrous Electric Light, Power and Traction Co., Ltd.
1.*W. Snaith, Toronto, Ont.
Secy.-Treas., The Thor Iron Works, Ltd.
3. A. C. Spencer, B.A.Sc., Hamilton, Ont.
Mechanical Engineer, Hamilton Stove & Heater Co.
3. G. S. Stewart, Montreal, Que.
Sales Engineer, Canadian General Electric Co.
1. J. A. Stiles, B.A.Sc., Fredericton, N.B.
Dean, Faculty of Applied Science and Engineering, University of N.B.

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*Diploma with honours.

1907—*Continued.*

3.*J. L. Stiver, Ottawa, Ont.
Electrical Standard Laboratory, Inland Revenue Department.
1. J. L. G. Stuart, B.A.Sc., Toronto, Ont.
Railway and Special Works Department, City Hall.
1. G. F. Summers, O.L.S., Haileybury, Ont.
Routly & Summers, Engineers and Surveyors.
1.*H. W. Sutcliffe, New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. P. M. Thompson, B.A.Sc., Ambridge, Pa.
Draftsman, American Bridge Co
3. O. R. Thomson, B.A.Sc., Trenton, Ont.
The Electric Power Co.
1. L. R. Thomson, B.A.Sc., Montreal, Que.
With Dominion Bridge Co.
1. W. J. Walker, Grant, Ont.
With Transcontinental Ry.
1. E. D. Wilkes, B.A.Sc., Toronto, Ont.
Main Drainage Department, City Hall.
3. A. F. Wilson, B.A.Sc., Chicago, Ill.
Inspector, Chicago Telephone Co.
3. M. H. Woods, B.A.Sc., Aylmer West, Ont.
1. G. W. A. Wright, 517 Oxford St., London, Ont.
Warren Bituminous Paving Co.
3. J. Young, Toronto, Ont.
Inspector, Canadian Fire Underwriters' Association.
3.*A. R. Zimmer, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.

1908.

3. H. G. Akers, B.A.Sc., 448-449 Confederation Life Bldg., Toronto, Ont.
Akers, Mason & Bonnington, Chemical Engineers.
3. L. F. Allan, Toronto, Ont.
Roadway Dept., City Hall.
1.*C. B. Allison, O.L.S., South Woodslee, Ont.
1.*R. M. Anderson, B.A.Sc., Burlington, Ont.
Speight & Van Nostrand Co.
5. R. J. Arens, B.A.Sc., Akron, O.
Chemist, Firestone Tire & Rubber Co.
3. H. C. Barber, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
1. E. Bartlett, B.A.Sc., Medicine Hat, Alta.
Surveyor and Civil Engineer.
2. F. J. Bedford, Porcupine, Ont.
Dome Mines.
1.*G. G. Bell, Portland, Me.
With Sawyer & Moulton, Consulting Engineers.
3. G. E. Black, B.A.Sc., Guelph, Ont.
Roadway Engineer, Provincial Prison Farm.
3. H. F. Bowes, Toronto, Ont.
Superintendent of Warren Bituminous Paving Co., Ltd.
3.*J. H. Brace, Montreal, P.Q.
Traffic Engineer, Bell Telephone Co.
1. P. R. Brecken, B.A.Sc., Toronto, Ont.
Assistant Secretary, Y.M.C.A.

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*Diploma with honours.

1908—*Continued.*

3. E. I. Brown, Toronto, Ont.
Sales Dept., Northern Electric and Manufacturing Co.
1. W. F. M. Bryce, Ottawa, Ont.
Assistant Engineer, City Engineer's Department.
3. P. H. Buchan, B.A.Sc., Vancouver, B.C.
Engineering Department, B.C. Electric Ry. Co., Ltd.
2. J. E. Campbell, B.A.Sc., Coldstream, Ont.
3. N. A. Campbell, Calgary, Alta.
Chief Chemist, Canada Cement Co.
3. A. M. Carroll, Cobalt, Ont.
Manager, Rochester Cobalt Mines, Ltd.
1. H. R. Carscallen, B.A.Sc., Calgary, Alta.
Assistant Hydrographer, with P. M. Sauder.
3. G. Challen, Chedoke P.O., Hamilton, Ont.
1. F. H. Chesnut, B.A.Sc., Port Mann, B.C.
Resident Engineer, C.N.R. Plant.
1. W. E. Cole (deceased).
4.*W. C. Collett, B.A.Sc., Toronto, Ont.
Manager, Collett Carriage Works.
1. R. Y. Cory, B.A.Sc., 3 Deer Park Crescent, Toronto, Ont.
Bond Department, Baillie, Croft and Wood.
3.*H. Coyne, B.A.Sc., Washington Blvd., Chicago, Ill.
Designing Draftsman.
2.*J. D. Cumming, B.A.Sc., Copper Cliff, Ont.
Asst. Mech. Supt., with Canadian Copper Co.
6. A. D. Dahl, B.A.Sc., Midland, Mich.
Chemist, Dow Chemical Co.
1. F. A. Danks, 544 Gladstone Ave., Toronto, Ont.
3. J. Darroch, Detroit, Mich.
Draftsman, Autoparts Mfg. Co.
3. H. C. Doorly (deceased).
2. R. H. Douglas, Edmonton, Alta.
Department of Public Works.
2.*F. C. Dyer, B.A.Sc., Toronto, Ont.
Demonstrator in Mining, University of Toronto.
1. F. M. Eagleson, Winchester, Ont.
Engineer and Surveyor.
1. C. Edwards, B.A.Sc., Toronto, Ont.
Dept. of Public Works, City Hall.
1. S. L. Evans, B.A.Sc., Corinth, Ont.
Dominion Land Surveyor.
1. E. O. Ewing, Toronto, Ont.
1. O. L. Flanagan, B.A.Sc., Toronto, Ont.
With C. H. Mitchell, Consulting Engineer, 1003 Traders Bank Bldg.
1. C. Flint, B.A.Sc., Winnipeg, Man.
Assistant Engineer, C.P.R.
1. A. H. Foster, B.A.Sc., Cochrane, Ont.
With T. C. Ry.
3. G. C. Francis, Verschoyle, Ont.
3. S. S. Gear, Fort Erie, Ont.
1. C. A. Grassie, B.A.Sc., Welland, Ont.
3.*C. L. Gulley, B.A.Sc., Toronto, Ont.
Northern Electric and Manufacturing Co.

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*Diploma with honours.

1908—*Continued.*

3. J. W. Hackner, B.A.Sc., Sandford, Ont.
Inspector of Public Works.
3. F. L. Haviland, Hamilton, Ont.
Draftsman, Hamilton Bridge Works Co.
1.*C. D. Henderson, Walkerville, Ont.
Canadian Bridge Co.
5.*D. J. Huether, B.A.Sc., Toronto, Ont.
With Dunlop Tire and Rubber Co.
1. A. D. Huether, B.A.Sc., 77 Grenville St., Toronto, Ont.
3.*A. N. Hunter, B.A.Sc., Toronto, Ont.
3. S. B. Iler, Commercial Chambers, Brantford, Ont.
Asst. Engineer, Hydro-Electric System.
1.*J. T. Johnston, B.A.Sc., Ottawa, Ont.
Hydraulic Engineer, Water Power Branch, Dept. of the Interior.
2. H. G. Kennedy, B.A.Sc., Cobalt, Ont.
Cobalt Lake Mine.
1.*W. R. Keys, North Bay, Ont.
T. & N. O Ry.
3.*J. N. M. Leslie, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. F. C. Lewis, Chicago, Ill.
American Bridge Co.
3. H. R. Lynar, Toronto, Ont.
Lynar & Mace, Consulting Engineers.
1.*W. G. McGeorge, Chatham, Ont.
Consulting Engineer.
1. J. M. McGregor, Ridgetown, Ont.
1. L. A. McLean, B.A.Sc. (deceased).
1. W. A. A. McMaster, A.S. & D.L.S., Prince Albert, Sask.
1. H. C. McMordie, B.A.Sc., Fort William, Ont.
Local Manager Trussed Concrete Steel Co. of Canada, Ltd.
1.*A. A. McRoberts, B.A.Sc., North Bay, Ont.
T. &. N. O. Ry.
5.*N. G. Madge, New York, N.Y.
Chief Chemist, Continental Rubber Co. of N. Y.
3. J. E. Malone, B.A.Sc., Toronto, Ont.
5. K. D. Marlatt, Oakville, Ont.
The Marlatt & Armstrong Co.
1. R. J. Marshall, B.A.Sc., Toronto, Ont.
Demonstrator in Applied Mechanics, University of Toronto.
5. G. L. Milligan, B.A.Sc., Brampton, Ont.
1. A. B. Mitchell, Montreal, Que.
With N. MacLeod, Contractors.
4.*J. C. P. Molesworth (deceased).
3. E. D. Monk, B.A.Sc., Cincinatti, Ohio.
General Electric Co.
3.*F. H. Moody, B.A.Sc., 70 Bond St., Toronto, Ont.
Mechanical Editor, Canadian Railway & Marine World.
3. J. H. Morice, B.A.Sc., 24 Swan St., Schenactady, N.Y.
General Electric Co.
3. F. E. H. Mowbray, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
3.*W. P. Murray, B.A.Sc., Montreal, Que.
Dominion Bridge Co.

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*Diploma with honours.

1908—*Continued.*

3. W. deC. O'Grady, Winnipeg, Man.
Engineer, Gas Traction Co., Ltd.
1. H. J. Peckover, B.A.Sc., 205 Dunn Ave., Toronto, Ont.
Draughtsman, City Hall.
1.*M. Pequegnat, B.A.Sc., Berlin, Ont.
1. H. G. Phillips, D.L.S., S.L.S., Regina, Sask.
Smith & Phillips, Civil Engineers.
3. M. Pivnick, B.A.Sc., Toronto, Ont.
1.*E. M. Proctor, B.A.Sc., Toronto, Ont.
Draftsman, Dept. of Railways and Bridges, City Hall.
3.*C. F. Publow, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
1. J. T. Ransom, B.A.Sc., Toronto, Ont.
Dominion Land Surveyor.
1.*W. B. Redfern, B.A.Sc., Steelton, Ont.
1. F. L. Richardson, B.A.Sc., Toronto, Ont.
With Miller, Cummings & Robertson.
3. H. A. Ricker, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
1. A. R. Robertson, B.A.Sc., Toronto, Ont.
With McGregor & McIntyre.
5. F. A. Robertson, Toronto, Ont.
With Canada Cement Co.
1.*W. A. Robinson, Winnipeg, Man.
Right-of-Way Surveyor, C.P.R.
3. R. C. Robinson, 134 Edmonton St., Winnipeg, Man.
With C. N. Ry.
5. L. J. Rogers, B.A.Sc., Toronto, Ont.
Demonstrator in Chemistry, University of Toronto.
2.*R. R. Rose, B.A.Sc., Copper Cliff, Ont.
With Canadian Copper Co.
3. D. Ross, B.A.Sc., Toronto, Ont.
Smith, Kerry & Chace.
1. A. O. Secord, Brantford, Ont.
3. W. E. V. Shaw, B.A.Sc., Toronto, Ont.
Purchasing Engineer, Hydro-Electric Power Commission.
3. H. F. Shearer, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
1. W. L. Stamford, B.A.Sc., Point du Bois, Man.
Inspector on Concrete Work, Hydro-Electric Power Plant.
3. R. H. Starr, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
3. A. W. J. Stewart, Toronto, Ont.
Toronto Hydro-Electric System.
3. J. St. Lawrence, Erie, Pa.
Supt. of Engine Shops, Erie City Iron Works.
1. J. J. Stock, D.L.S., 448 Cooper St., Ottawa. Ont.
Contractor.
1. H. B. Stuart, B.A.Sc., Hamilton, Ont.
Draftsman, Hamilton Bridge Works Co.
2. J. L. G. Stuart, B.A.Sc., Toronto, Ont.
Railway & Special Works Department, City Hall.
3. A. D. Sword, B.A.Sc., 220 Rusholme Rd., Toronto, Ont.

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*Diploma with honours.

1908—*Continued.*

3. J. W. R. Taylor, B.A.Sc., Campbellford, Ont.
Erecting Engineer for Canadian Westinghouse Co.
1.*W. E. Taylor, B.A.Sc., Toronto, Ont.
3. V. C. Thomas, B.A.Sc., Cleveland, Ohio.
With Wellman-Seaver-Morgan Co.
1. J. H. Thornley, B.A.Sc., Niagara Falls. Ont.
H. D. Symnes & Co.
1. C. G. Toms, B.A.Sc., 56 Spencer Ave., Toronto, Ont.
General Manager, Toms Contracting Co., Ltd.
1. H. W. Tye, Winnipeg, Man.
Construction Dept., C.P.R.
3. C. P. Van Norman, B.A.Sc., Toronto, Ont.
Toronto and York Radial Ry. Co.
1. T. L. Villeneuve, Chicoutimi, Que.
Assistant Engineer, Dept. of Public Works.
1. J. A. Walker, B.A.Sc., Vancouver, B.C.
Assistant to Surveyor-General.
3.*B. W. Waugh, B.A.Sc., Ottawa, Ont.
Dept. of the Interior.
3. R. M. Wedlake, B.A.Sc., Brantford, Ont.
With Cockshutt Plow Co., Ltd.
3. R. P. Weir, Toronto, Ont.
Canadian Manager, Cutter Elec. and Mfg. Co.
1. A. M. West, B.A.Sc., Vancouver, B.C.
C.N.R. Office.
1. W. R. White, Drayton, Ont.
3. W. J. White, B.A.Sc., Boston, Mass.
Supt. on Construction, General Electric Co.
3.*F. D. Wilson, B.A.Sc., Toronto, Ont.
Standard Steel Const. Co.
1. J. M. Wilson, Moose Jaw, Sask.
Wilson, Townsend and Saunders, Engineers and Contractors.
1. D. O. Wing, Vancouver, B.C.
City Engineer's Office.
3.*R. Young, Lake Bunstzen, Burrard Inlet, B.C.

1909.

3. E. G. Arens, Hamilton, Ont.
Canadian Westinghouse Co.
3. H. V. Armstrong, Estevan, Sask.
Resident Engineer, Chipman & Power.
2.*E. T. Austin, B.A.Sc., Coniston, Ont.
With the Mond Nickel Co.
3. W. H. Barry, B.A.Sc., Niagara Falls, Ont.
Anderson and Barry, Engineers and Surveyors.
3. R. D. S. Beckstedt, B.A.Sc., Sault Ste. Marie, Ont.
Sales Agent, Tagona Water & Light Co.
3. R. E. Beith, Toronto, Ont.
Dept. of Public Works.
1.*G. A. Bennett, B.A.Sc., Tillsonburg, Ont.
Dominion Land Surveyor, Dept. of the Interior.
3. E. R. Birchard, B.A.Sc., Toronto, Ont.
Russell Motor Car Co.

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*Diploma with honours.

1909—*Continued.*

3. W. D. Black, B.A.Sc., Montreal, Que.
Supt., Otis-Fensom Elevator Co., Ltd.
3.*D. C. Blizard, B.A.Sc., Toronto, Ont.
Supt. Mechanical Construction, Toronto Power Co.
1.*W. J. Boulton, B.A.Sc., Wallaceburg, Ont.
3. G. H. Bowen, B.A.Sc., Niagara Falls, Ont.
Engineer on Construction, H. A. Campaigne & Co.
3. C. E. Brown, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
1. E. W. Browne, B.A.Sc., 247 Cannon St. E., Hamilton, Ont.
1. J. A. Buchanan, 140 Jasper West, Edmonton, Alta.
3. J. E. Burns, B.A.Sc., 231 Seaton St., Toronto, Ont.
1. M. G. Cameron, B.A.Sc., Peterboro', Ont.
3.*R. A. Campbell, Sault Ste, Marie, Ont.
Supt., Tagona Water & Light Co.
1. V. S. Chesnut, B.A.Sc., Sault Ste. Marie, Ont.
Resident Engineer, C.N.P.R.
1.*C. G. Cline, B.A.Sc., Kamloops, B.C.
Assistant Engineer, Dept. of the Interior.
1. J. G. Collinson, B.A.Sc., Niagara Falls, N.Y.
Carborundum Co.
1. G. W. Coltham, B.A.Sc., Aurora, Ont.
3.*H. A. Cooch, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. W. E. Corman, Toronto, Ont.
Chief Draftsman, with C. H. & P. H. Mitchell.
3. T. H. Crosby, B.A.Sc., Vancouver, B.C.
Sales Engineer, Canadian Westinghouse Co.
3. R. H. Cunningham, 193 Dougall Ave., Windsor, Ont.
Hoskins Electrical Manufacturing Co.
1.*F. A. Dallyn, B.A.Sc., Toronto, Ont.
Engineer, City Testing Laboratory, Board of Public Health.
3. C. N. Danks, Sherbrooke, Que.
Asst. Engineer, Jenckes Machine Co.
1. E. M. Dann, Kamloops, B.C.
Asst. Engineer, Hydrographic Survey.
3. H. W. Davis, Kingston, Ont.
With A. Davis & Son, Ltd., Leather Manufacturers.
2.*A. I. Davis, B.A.Sc., Toronto, Ont.
Canada Foundry Co.
1. H. C. Davis, Bangalore, India.
With Dr. Leslie Coleman.
1. I. H. Dawson, Cochrane, Ont.
With T.C. Ry.
3. W. H. Delahaye, B.A.Sc., Pembroke, Ont.
3. W. P. Derham, B.A.Sc., Ottawa, Ont.
5.*W. A. Dodds, B.A.Sc., Syracuse, N.Y.
With Penman-Littlehales Chemical Co.
1. R. H. Douglas, Edmonton, Alta.
Department of Public Works.
1. M. O. Duff,
2. L. J. Duthie, Timmins, Ont.
Assayer and Surveyor, Porcupine Crown Mine.
1. F. S. Falconer, B.A.Sc., 127 Slater St., Ottawa, Ont.

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*Diploma with honours.

1909—*Continued.*

3. T. A. FARGEY, B.A.Sc., Detroit, Mich.
With Scott Bros. Electric Co.
1. J. B. FERGUSON, B.A.Sc., Winnipeg, Man.
Eng. Dept. C.N.R.
3. A. T. FERGUSSON, B.A.Sc., 70 Madison Ave., Toronto, Ont.
3. T. E. FREEMAN, B.A.Sc., Peterboro', Ont.
Canadian General Electric Co.
3. E. R. FROST, B.A.Sc., St. Albert, Alta.
Resident Engineer, Foundation Co.
1. A. E. GLOVER, B.A.Sc., Edmonton, Alta.
5. A. E. GOODERHAM, Toronto, Ont.
With Gooderham & Worts.
1. D. A. GRAHAM, B.A.Sc., Chilliwack, B.C.
Track Engineer, C.N.P.R.
2. R. R. GRANT, 106 Warren Rd., Toronto, Ont.
Contractor.
1. J. E. GRAY, B.A.Sc., Edmonton, Alta.
With T.C. Ry.
1. G. E. D. GREENE, B.A.Sc., Toronto, Ont.
1. W. H. GREENE, Moose Jaw, Sask.
Assistant City Engineer.
1. W. W. GUNN, B.A.Sc., 133 Isabella St., Toronto, Ont.
3. F. G. HAGERMAN Cobourg, Ont.
3. C. J. HARPER, Le Pas, Man.
Engineer and Surveyor.
1. D. W. HARVEY, B.A.Sc., Toronto, Ont.
Canada Foundry Co.
1. C. O. HAY (deceased).
3.*J. HEMPHILL, Magpie Mine, Ont.
Construction Engineer, Algoma Steel Corpn., Mines Dept.
1.*G. HOGARTH, Toronto, Ont.
Engineer's Office, Dept. of Public Works of Ontario.
3. A. E. HOLMES, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
3. C. R. HOLMES, B.A.Sc., Detroit, Mich.
With Electric Storage Battery Co.
1. G. C. HOSHAL, B.A.Sc., Windsor, Ont.
Hydro-Electric Power Commission.
3. C. HUGHES, B.A.Sc., 47 Dundonald St., Toronto, Ont.
With St. John & Quebec Ry.
1. A. E. HUNTER, B.A.Sc., Surveying, Peace River Dist.
3.*H. IRWIN, B.A.Sc., Toronto, Ont.
Editor, Canadian Engineer.
3. J. ISBISTER, B.A.Sc., Victoria Mines, Ont.
Electrical Supt., with Mond Nickel Co.
3. F. P. JACKES, B.A.Sc., Toronto, Ont.
Traffic Dept., Bell Telephone.
1.*J. E. JACKSON, Oxford Centre, Ont.
1. E. W. JAMES, B.A.Sc., Winnipeg, Man.
Bridge Engineer, Manitoba Government.
1.*C. C. JOHNSON, B.A.Sc., Sudbury, Ont.
Chipman & Power.
1. C. E. JOHNSTON, B.A.Sc., Fairford, Man.
Dom. Land Surveyor.

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*Diploma with honours.

1909—*Continued.*

1. W. J. Johnston, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.
1.*A. H. E. Keffer, North Bay, Ont.
With T. & N.O. Ry.
3. J. B. O. Kemp, B.A.Sc., Toronto, Ont.
With Toronto Structural Steel Co.
3. W. R. Key, B.A.Sc., Toronto, Ont.
Asst. Engineer, Turnbull Elevator Co.
5. H. N. Klotz, B.A.Sc., Toronto, Ont.
Chemist, Gutta Percha Rubber Co.
3. A. W. Lamont, B.A.Sc., Toronto, Ont.
Sales Engineer, Toronto Hydro-Electric System.
3.*C. B. Langmuir, B.A.Sc., Toronto, Ont.
Manager, Electrical Dept., Factory Products, Ltd.
3. A. E. Lennox, B.A.Sc., Cleveland, Ohio.
Publicity Engineer, National Electric Lamp Association.
1.*R. W. E. Loucks, Saskatoon, Sask.
Brown & Loucks, Engineers & Contractors.
1. N. C. A. Lloyd, Solina, Ont.
3. E. D. MacFarlane, B.A.Sc., Houston, Texas.
With Houston Electric Ry. Co.
1. J. G. Mackinnon, Fitzhugh, Alta.
Resident Engineer, C.N.R.
1. W. A. MacLachlan, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
3. B. A. Maclean, B.A.Sc., Orillia, Ont.
1. N. W. Macpherson, B.A.Sc., St. Thomas, Ont.
3. D. D. McAlpine, B.A.Sc., Hawkesbury, Ont.
Engineer, Riordon Paper and Pulp Co.
1. A. S. McArthur, B.A.Sc., 56 Lowther Ave., Toronto, Ont.
3. C. R. McCollum, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
3.*A. S. McCordick, B.A.Sc., Sault Ste, Marie, Ont.
Assistant to City Engineer.
3. P. J. McCuaig, B.A.Sc., Milwaukee, Wis.
1. F. H. McKechnie, B.A.Sc., Toronto, Ont.
3. W. G. McIntosh, B.A.Sc., Toronto, Ont.
Canada Foundry Co.
3. G. McLeod, Waupaca, Wis.
Electrician, Electric Light & Ry. Co.
1. V. McMillan, B.A.Sc., Toronto, Ont.
Sewer Dept., City Hall.
3. N. H. Manning, B.A.Sc., Toronto, Ont.
District Representative, Canadian Insp. & Testing Labs.
1.*A. B. Manson, B.A.Sc., Stratford, Ont.
City Engineer.
1. E. S. Martindale, B.A.Sc., Aylmer, Ont.
Dominion Land Surveyor.
1. O. W. Martyn, B.A.Sc., D.L.S., S.L.S., Box 443, Swift Current, Sask.
2. C. A. Morris, B.A.Sc., Copper Cliff, Ont.
Canadian Copper Co.
3. G. Morton, B.A.Sc., Calgary, Alta.
Canadian Westinghouse Co.
1.*F. V. Munro, B.A.Sc., Chatham, Ont.

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*Diploma with honours.

1909—*Continued.*

1. E. A. Neville, B.A.Sc., Vancouver, B.C.
Neville & Stewart, Civil Engineers.
1. J. Newton, B.A.Sc., Toronto, Ont.
City Engineer's Department.
3.*L. S. Odell, Morden, Man.
Contractor's Supt.
3. V. J. O'Donnell, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. J. J. O'Hearn, Fort William, Ont.
Manager, Supply Dept., Canadian General Electric Co.
1. A. W. Pae, Calgary, Alta.
Davidson & Pae, Real Estate Brokers.
1.*A. M. Petry, B.A.Sc., Toronto, Ont.
Assistant Manager, "Chas. Potter."
1. R. B. Pigott. 157 Wentworth St. S., Hamilton, Ont.
2. G. M. Ponton, Calgary, Alta.
Harrison & Ponton.
3.*C. J. Porter, B.A.Sc., Portland, Oregon.
Draftsman, Mount Hood Ry. & Power Co.
3. A. I. Proctor, King St. E., Hamilton, Ont.
1. J. Quail, Winnipeg, Man.
Manitoba Bridge and Iron Works.
1. A. F. Ramsperger, Toronto, Ont.
With Canada Foundry Co.
1.*C. R. Redfern, B.A.Sc., Toronto, Ont.
Engineer, P. Lyall & Sons, Ltd., Contractors.
3.*L. T. Rutledge, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
1. A. U. Sanderson, B.A.Sc., 10 Oaklands Ave., Toronto, Ont.
3.*R. A. Sara, B.A.Sc., Winnipeg, Man.
Sales Manager, City Light and Power Dept.
3.*A. Schlarbaum, B.A.Sc., 5 Lansdowne Ave., Galt, Ont.
Hydro-Electric Engineer for R. P. & P. Co
3.*C. Schwenger, B.A.Sc., Toronto, Ont.
Electrical Department, City Hall.
1. C. A. Scott, Toronto, Ont.
Roadway Department, City Hall.
1. A. Sedgwick, Toronto, Ont.
Ontario Dept. of Public Works.
1. B. H. Segre, B.A.Sc., Winnipeg, Man.
Dominion Land Surveyor, Dept. of Interior.
1. F. V. Seibert, B.A.Sc., Edmonton, Alta.
Engineer and Surveyor, Dept. of Interior.
5. M. R. Shaw, B.A.Sc., Toronto, Ont.
3. M. W. Sparling, B.A.Sc., Trenton, Ont.
Trenton Electric Power Co.
3. J. J. Spence, Toronto, Ont.
With Sovereign Construction Co.
1. D. S. Stayner, B.A.Sc., Toronto, Ont.
Bridge Department, City Engineer's Office.
1.*N. C. Stewart, B.A.Sc., Vancouver, B.C.
Neville & Stewart.
1.*P. H. Stock, St. Catharines, Ont.
Asst. Engineer, N. St. C. & T.R. Ry.

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*Diploma with honours.

1909—*Continued.*

1. J. C. STREET, B.A.Sc., St. Catharines, Ont.
Welland Ship Canal.
3. S. STROUD, B.A.Sc., Toronto, Ont.
With Canadian Westinghouse Co.
1. C. C. SUTHERLAND, B.A.Sc., 446 Heiminck St., Edmonton, Alta.
City Engineer's Staff.
1. R. G. SWAN, B.A.Sc., Vancouver, B.C.
B. C. Electric Railway Co.
1. A. D. SWORD, B.A.Sc., 220 Rusholme Rd., Toronto, Ont.
1.*H. W. TATE, B.A.Sc., 224 Wright Ave., Toronto, Ont.
With James, Loudon & Hertzberg, Engineers.
3.*E. A. THOMPSON, Lachine Locks, Que.
With Dominion Bridge Co.
1. G. A. TIPPER, B.A.Sc., Brantford, Ont.
Contracting Surveyor.
3. A. G. TREES, B.A.Sc., Toronto, Ont.
With Saml. Trees & Co.
3. W. G. TURNBULL, B.A.Sc., Toronto, Ont.
Chief Engineer, Turnbull Elevator Co.
1. J. E. UNDERWOOD, Saskatoon, Sask.
McArthur, Murphy & Underwood.
1. C. P. VAN NORMAN, B.A.Sc., Toronto, Ont.
Asst. Engineer, Toronto & York Radial Ry. Co.
1. J. VAN NOSTRAND, 97 Delaware Ave., Toronto, Ont.
1. A. VATCHER, B.A.Sc., Freshwater, Bay de Verde, Nfld.
With the Reid Newfoundland Co.
1. C. M. WALKER, B.A.Sc., Banff, Alta.
Dom. Land Surveyor.
1. E. E. WEBB, Box 358, Orillia, Ont.
Contractor.
1. C. E. WEBB, B.A.Sc., 227 Spadina Rd., Toronto, Ont.
3. F. C. WHITE, B.A.Sc., Walkerville, Ont.
With Canadian Bridge Co.
3. A. R. WHITELAW, Toronto, Ont.
With Midland Const. Co.
1. R. G. WILKINSON, Aberarder, Ont.
5.*J. A. McK. WILLIAMS, B.A.Sc., Toronto, Ont.
A. E. Ames & Co.
1.*O. T. G. WILLIAMSON, B.A.Sc., Quebec, Que.
With Canadian Stewart Co.
3. L. R. WILSON, B.A.Sc., Montreal, Que.
With St. Lawrence Bridge Co., Ltd.
3. F. F. WILSON, B.A.Sc., Edmonton, Alta.
Surveyor.
2. S. A. WOOKEY, B.A.Sc., Timmins, Ont.
Field Engineer, Dominion Mineral Exploration Syndicate

1910.

2. J. H. ADAMS, B.A.Sc., 25 Maynard Ave., Toronto, Ont.
3.*O. F. ADAMS, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
1.*W. G. AMSDEN, B.A.Sc., 95 Howland Ave., Toronto, Ont.
1. J. A. BAIRD, B.A.Sc., Leamington, Ont.
With A. Baird, O.L.S., C.E.

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*Diploma with honours.

1910—*Continued.*

1.*W. J. Baird, B.A.Sc., Scarboro, Ont.
1. H. A. Barnett, B.A.Sc., 125 Yorkville Ave., Toronto, Ont.
1.*E. W. Berry, Seaforth, Ont.
1. H. C. Bingham, New Grayson Bldg, Moose Jaw, Sask.
Engineer & Surveyor.
2. D. G. Bisset, B.A.Sc., Hosmer, B.C.
C.P.R. Coal Mines.
1. R. H. H. Blackwell, Biscotasing, Ont.
Resident Engineer, C.N.O.
1.*E. P. Bowman, B.A.Sc., West Montrose, Ont.
2. A. F. Brock, B.A.Sc., Copper Cliff, Ont.
Chief Mine Surveyor, with Canadian Copper Co.
3. M. O. Browne, 319 Lippincott St., Toronto, Ont.
3. J. R. Burgess, B.A.Sc., Buffalo, N.Y.
With Howard Iron Works.
1. N. G. H. Burnham, B.A.Sc. (deceased).
3.*W. C. Cale, B.A.Sc., Keokuk, Ia.
Stone & Webster Engineering Corporation.
2.*A. D. Campbell, B.A.Sc., Cobalt, Ont.
Mining Engineer, O'Brien Mine.
3. W. M. Carlyle, B.A.Sc., Toronto, Ont.
With Carlyle Construction Co.
3. N. S. Caudwell, Toronto, Ont.
Student at Law, Osgoode Hall.
3. A. W. Chesnut, B.A.Sc., Toronto, Ont.
1. D. C. Chisholm, B.A.Sc., Winnipeg, Man.
1. H. S. Clark. St. Catharines, Ont.
Welland Ship Canal Staff.
1. J. A. Claveau, Jonquiere, Que.
Assistant Engineer, Jonquiere Pulp Co.
3. L. S. Cockburn, B.A.Sc., Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.
3. A. G. Code, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
3. C. R. Cole, B.A.Sc., Toronto, Ont.
1. G. A. Colquhoun, B.A.Sc., Vankleek Hill, Ont.
4.*J. H. Craig, B.A.Sc., Toronto, Ont.
Craig & Madill, Architects.
3.*C. D. Dean, B.A.Sc., 14 Wright Ave., Toronto, Ont.
5. A. V. DeLaporte, B.A.Sc., Toronto, Ont.
Chemist, Provincial Board of Health.
3. R. L. Dobbin, B.A.Sc., Peterboro', Ont.
3.*W. P. Dobson, B.A.Sc., Toronto, Ont.
Alumni Research Fellow, University of Toronto.
3.*J. M. Duncan, B.A.Sc., Collingwood, Ont.
Collingwood Shipbuilding Co.
1. L. Eadie.
2. V. H. Emery, B.A.Sc., Timmins, Ont.
Mine Supt., Hollinger Mines.
3. W. J. Evans, B.A.Sc., Toronto, Ont.
3. H. W. Fairlie, Montreal, Que.
Ry. Dept., The Northern Elec. & Mfg. Co.
3.*C. R. Ferguson, B.A.Sc., Toronto, Ont.
Dominion Bridge Co

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*Diploma with honours.

1910—*Continued.*

3. J. W. Ferguson, B.A.Sc., Lachine Locks, Que.
With Dominion Bridge Co.
4.*J. B. K. Fisken, B.A.Sc., Toronto, Ont.
1. A. W. Fletcher, B.A.Sc., Calgary, Alta.
Department of Public Works.
1.*J. A. Fletcher, Fisher River, Man.
Assistant to E. W. Robinson, D.L.S.
3. F. T. Fletcher, B.A.Sc., Calgary, Alta.
Dept. of Public Works.
3. T. R. C. Flint, B.A.Sc., Toronto, Ont.
3. R. C. Follett,
2. J. M. Foreman, B.A.Sc., Lucan, Ont.
1. W. J. Foster.
3.*W. C. Foulds, B.A.Sc. Winnipeg, Man.
Bridge Engineer. Dept. of Public Works.
1. A. Fraser, B.A.Sc., Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.
2. J. Fredin, London, Ont.
3. H. Gall, B.A.Sc., 6 Jameson Ave., Toronto, Ont.
1. M. M. Gibson, B.A.Sc., Toronto, Ont.
Gibson & Gibson, O.L.S., C.E.
1. J. M. Gibson, B.A.Sc., Toronto, Ont.
With Chipman & Power.
1. V. A. E. Goad, B.A.Sc., Montreal, P.Q.
Chas. E. Goad Co.
3. V. S. Goodeve, Hamilton, Ont.
With Canadian Westinghouse Co.
1. H. Goodridge.
2. W. A. Gordon, Sundridge, Ont.
3. V. F. Gourlay, B.A.Sc., Galt, Ont.
Manufacturer.
3. E. B. Graham, B.A.Sc., Toronto, Ont.
2 R. L. Greene, B.A.Sc., Ottawa, Ont.
Agent, Canadian Allis-Chalmers, Ltd.
5. J. H. Harris, B.A.Sc., Danforth Ave., Toronto, Ont.
W. Harris & Co.
1. N. J. Harvie, B.A.Sc., Orillia, Ont.
1. J. G. Helliwell, Windsor, Ont.
With Canadian Bridge Co.
1. J. F. Henderson, 62 St. Mary St., Toronto, Ont.
3. F. G. Hickling, B.A.Sc., East Pittsburgh, Pa.
Westinghouse Electric & Manufacturing Co.
1. O. H. Hoover.
2. P. E. Hopkins, B.A.Sc., Porcupine, Ont.
With Ontario Bureau of Mines.
3.*W. J. Irwin,
2. F. L. James, B.A.Sc., Tillsonburg, Ont.
1. H. C. Johnston, 509 Palmerston Ave., Toronto, Ont.
1. R. H. Johnston, B.A.Sc., 716 9th St., Edmonton, Alta.
1. J. C. Keith, B.A.Sc., Calgary, Alta.
2.*J. T. King, B.A.Sc., Toronto, Ont.
Demonstrator in Mining Engineering, University of Toronto.
3. G. A. Kingstone, B.A.Sc., Montreal, Que.
With Montreal Engineering Co.

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*Diploma with honours.

1910—*Continued.*

2. G. L. KIRWAN, B.A.Sc., Ottawa, Ont.
Topographical Surveys Dept., Dept. of Interior.
5. P. T. KIRWAN, B.A.Sc., Box 131, Hudson Heights, N.J.
1. S. KNIGHT, B.A.Sc., Edmonton, Alta.
With Driscoll & Knight.
3. E. R. LAWLER, Toronto, Ont.
Toronto Hydro-Electric System.
3.*C. B. LEAVER, B.A.Sc., 459 Bloor St., Toronto, Ont.
3. R. G. LEE, B.A.Sc., Toronto, Ont.
Asst. Sales Manager, Toronto Hydro-Electric System
1. J. N. LEITCH (deceased).
1. J. C. LONGSTAFF, 20 Webster Ave., Toronto, Ont.
3. J. B. MACDONALD, B.A.Sc., Winnipeg, Man.
Canadian Inspection & Testing Laboratories.
2. A. D. MACDONALD, B.A.Sc., Cobalt, Ont.
Asst. Supt. Penn-Canadian Mine.
1. J. A. MACDONALD, B.A.Sc., Toronto, Ont.
1. G. A. MACDONALD, B.A.Sc., Fernie, B.C.
1. A. E. MACGREGOR, B.A.Sc., Simcoe, Ont.
With Chipman & Power.
1. E. G. MACKAY, B.A.Sc., Hamilton, Ont.
MacKay, MacKay & Webster, Civil Engineers and Surveyors.
1. G. G. MACLENNAN, B.A.Sc., Ottawa, Ont.
Engineer, Foundations Co
1. D. D. MACLEOD, B.A.Sc., Calgary, Alta.
Dept. of the Interior.
3. H. G. MACMURCHY, B.A.Sc., 60 Alhambra Ave., Toronto, Ont.
3.*H. J. MACTAVISH, B.A.Sc., 57 Breadalbane St., Toronto, Ont.
4. T. C. MCBRIDE, B.A.Sc., 501 Colborne St., London, Ont.
1. S. G. MCDOUGALL, B.A.Sc., 287 McLaren St., Ottawa, Ont.
1.*T. A. MCELHANNEY, B.A.Sc., 706 Dominion Trust Bldg., Vancouver, [B.C.
McElhanney Bros., Civil Engineers, D. & B.C. Land Surveyors.
1.*P. J. MCGARRY, Toronto. Ont.
3.*L. R. MCKIM, Pittsfield, Mass.
1.*J. MCNIVEN, B.A.Sc., Moose Jaw, Sask.
Resident Engineer, Dept. of Trade and Commerce.
3. J. I. MCSLOY, B.A.Sc., St. Catharines, Ont.
Textile Manufacturer.
2. A. W. R. MAISONVILLE, B.A.Sc., Pilettes Corners, Ont.
1.*N. MARR, B.A.Sc., Prince Albert, Sask.
With C. H. Mitchell & P. H. Mitchell.
1.*W. H. MARTIN, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
2. A. C. MATTHEWS, B.A.Sc., 89 St. George St., Toronto, Ont.
1. C. H. MEADER, B.A.Sc., Toronto, Ont.
3.*H. O. MERRIMAN, B.A.Sc., Hamilton, Ont.
Asst. Engineer, Hydro-Electric Dept.
1.*D. J. MILLER, Red Deer, Alta.
Alberta Central Ry.
1. F. S. MILLIGAN, B.A.Sc., Toronto, Ont.
3. P. E. MILLS, B.A.Sc., 52 Howland Ave., Toronto, Ont.

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*Diploma with honours.

1910—*Continued.*

3. J. P. MORGAN, Toronto, Ont.
With Orpen Construction Co.
1. F. R. MORTIMER, B.A.Sc., Ottawa, Ont.
Hydrographic Survey, Dept. of Interior.
1. A. H. MUNRO, B.A.Sc., Campbellford, Ont.
Trent Valley Canal.
3. J. C. NASH, B.A.Sc., Hamilton, Ont.
With Hydro-Electric Dept.
1.*V. A. NEWHALL, B.A.Sc., Calgary, Alta.
Dept. of Interior.
2.*W. E. NEWTON, B.A.Sc., Sandon, B.C.
Slocan Star Mines.
1. F. T. NICHOL, B.A.Sc., Winnipeg, Man.
Assistant Engineer to E. W. Noble, Fireproofing Engineer.
1. C. M. O'NEIL, B.A.Sc., Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.
3. C. E. PALMER, B.A.Sc., Toronto, Ont.
Bell Telephone Co.
3. G. C. PARKER, B.A.Sc., Toronto, Ont.
Assoc. Editor "Motor Magazine."
3. K. K. PEARCE, B.A.Sc., Port Hope, Ont.
1. A. W. PEARSON.
3. C. H. PHILLIPS, B.A.Sc., 157 Marguerretta St., Toronto, Ont.
1. D. E. PYE, Cranbrook, B.C.
1. W. S. RAMSAY, B.A.Sc., Montreal, Que.
With Dominion Bridge Co.
3. B. J. REDFERN (deceased).
1. H. C. RITCHIE, Calgary, Alta.
Dept. of Public Works.
1. O. W. ROSS, B.A.Sc.,
Welland Canal Survey.
1. W. F. B. RUBIDGE, Montreal, Que.
Dominion Bridge Co.
3. W. C. SHAW, B.A.Sc., Toronto, Ont.
Hamilton Gear and Machine Co.
1.*W. C. SMITH, B.A.Sc., Victoria, B.C.
Engineer, Water Rights Branch, Dept. of Lands.
2. F. L. SMITH, Nelson, B.C.
Supt., Queen Victoria Mine.
5. G. E. SMITH, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
2. R. J. SPRY, B.A.Sc., Nelson, B.C.
Supt., The B.C. Copper Co.
2. A. L. STEELE, B.A.Sc., Toronto, Ont.
Asst. in Mining Engineering, University of Toronto.
2.*H. M. STEVEN, B.A.Sc., Timmins, Ont.
Mine Engineer, Canadian Mining and Finance Co.
1.*L. I. STONE, London, Ont.
Resident Engineer, G.T. Ry.
3. A. L. SUTHERLAND, B.A.Sc., Peterboro', Ont.
With Canadian General Electric Co.
3. E. A. TERNAN, B.A.Sc., Toronto, Ont.
Toronto and York Radial Ry. Co.
5.*W. H. THOM, Toronto, Ont.
Factory Manager, Lyman's Drug & Chemical Co.
3. H. B. THOMPSON, Wellington, Ont.

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*Diploma with honours.

1910—*Continued.*

3. R. M. A. Thompson, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Comm.
2.*C. G. Titus, Cobalt, Ont.
Engineer, Timiskaming Mine.
3. K. M. van Allen, B.A.Sc., 60 Bernard Ave., Toronto, Ont.
1. L. T. Venney, B.A.Sc., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
1. N. Wagner, 19 Gerrard St. E., Toronto, Ont.
Bridge Dept., Canada Foundry Co.
1. R. M. Walker, B.A.Sc., 232 St. James St., Montreal, Que.
With Walter J. Francis & Co., Consulting Engineers.
2. T. Walton, B.A.Sc. (deceased).
1. G. A. Warrington, B.A.Sc., Winnipeg, Man.
M.L.S., Parliament Bldgs.
3. M. B. Watson, B.A.Sc., Toronto, Ont.
With Toronto Electric Light Co.
3.*H. M. White, Lachine Locks, Que.
With Dominion Bridge Co.
1. J. L. Whitside, B.A.Sc., Toronto, Ont.
4. W. S. Wickens, B.A.Sc., Toronto, Ont.
Fellow in Drawing, University of Toronto.
3.*G. K. Williams, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
1.*W. H. Wilson, B.A.Sc., Toronto, Ont.
Canada Foundry Co.
3. G. E. Woodley, Charleston, W. Va.
Central Station Engineer.
1. G. R. Workman, Toronto, Ont.
Fellow in Drawing, University of Toronto.
3. L. A. Wright, B.A.Sc., 278 Jarvis St., Toronto, Ont.
Asst. Engineer, C.P.R.
3.*A. W. Youell, B.A.Sc., Sherbrooke, Que.
Canadian Ingersoll Rand Co.
1. W. S. Young, B.A.Sc., Guelph, Ont.

1911.

5.*J. Aitken, B.A.Sc., Brantford, Ont.
Pratt & Letchworth Co.
1. L. B. Allan, B.A.Sc., Toronto, Ont.
3. E. G. Archer, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Comm.
1. L. A. Badgley, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
1. T. H. Bartley, B.A.Sc., Sturgeon Falls, Ont.
Toronto Power Co.
2.* H. L. Batten, Box 564, Douglas, Ariz.
With Copper Queen Smelter.
1. G. L. Berkeley, Toronto, Ont.
Asst. Engineer, Surveys Dept. Harbor Commission.
3.*J. H. Billings, B.A.Sc., Galt, Ont.
Canadian Machinery Corporation.
2.*J. R. Bissett, B.A.Sc., Toronto, Ont.
3. W. O. Boswell, Toronto, Ont.
1. F. Bowman, Lachine, Que.
Dominion Bridge Co.

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*Diploma with honours.

1911—*Continued.*

3. T. W. Brackinreid, B.A.Sc., Peterboro', Ont.
Can. Gen. Electric Co.
2. W. M. Brock, B.A.Sc., Walkerville, Ont.
Canadian Bridge Co.
1. W. H. D. Brouse, B.A.Sc., Toronto, Ont.
With Smith, Kerry & Chace.
3. H. Brown, B.A.Sc., Calgary, Alta.
Dept. of the Interior.
3.*E. T. Cain, B.A.Sc., Toronto, Ont.
1. C. S. Cameron, Beaverton, Ont.
1. C. D. Campbell, Galt, Ont.
Town Engineer.
6.*W. W. Chadwick, B.A.Sc., Hamilton, Ont.
1. R. B. Chandler, B.A.Sc.. Saskatoon, Sask.
Asst. City Engineer.
1. P. G. Cherry, B.A.Sc., Toronto, Ont.
Advertising Sales Manager, Might Directories, Ltd.
3. E. F. Chesnut, B.A.Sc., Vancouver, B.C.
1. H. J. Clark, B.A.Sc., Toronto, Ont.
1. F. W. Clark, 669 Spadina Ave., Toronto, Ont.
3. F. S. Cleary, 34 Crawford Ave., Windsor, Ont.
2.*D. B. Cole, B.A.Sc., Copper Cliff, Ont.
Smelter Maintenance Engineer, Canadian Copper Co.
3.*A. S. Cook, B.A.Sc., Southampton, Ont.
Saugeen Light and Power Co.
1. C. W. Cornell, New Westminster, B.C.
Jones, Cornell Const. Co. Ltd.
1. M. E. Crouch, Pembroke, Ont.
With H. J. Beatty.
1. O. F. Cummins, Regina, Sask.
Provincial Drainage Engineer
3. W. M. Cruthers, B.A.Sc., Peterboro', Ont.
Can. Gen. Electric Co.
3. T. J. Cunerty, East Pittsburgh, Pa.
With Westinghouse Elec. Co.
1. C. H. Cunningham, B.A.Sc., Toronto, Ont.
Engineer, Frank Barber & Co.
1. J. H. Curzon, Toronto, Ont.
Fellow in Surveying, University of Toronto.
3.*F. K. D'Alton, B.A.Sc., Peterboro', Ont.
Testing Dept., C. G. E. Co.
1. W. B. Davis, B.A.Sc., Toronto, Ont.
3. F. C. DeGuerre, B.A.Sc., Vancouver, B.C.
B.C. Electric Co.
3.*F. H. Downing, Winnipeg, Man.
With Manitoba Bridge & Iron Works.
1. W. B. Dunbar, B.A.Sc., Toronto, Ont.
5. C. H. Eckert, B.A.Sc., Longford, Ont.
With Standard Chemical Co.
3. J. A. Elliot, B.A.Sc., Niagara Falls, N.Y.
Castner Electrolytic Alkali Co.
1. G. R. Elliott, B.A.Sc., Calgary, Alta.
Hydrographic Survey, Dept. of Interior.

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*Diploma with honours.

1911—*Continued.*

1. C. F. Elliott, B.A.Sc., *Student at Law, Osgoode Hall.*	Toronto, Ont.
1. K. A. Farrell, B.A.Sc.,	Toronto, Ont.
3. T. J. Farrelly, *Bell Telephone Co.*	Montreal, Que.
1. S. E. Flook, B.A.Sc., *O. L. Surveyor and Civil Engineer.*	Port Arthur, Ont.
3. C. C. Flynn.	Chicago, Ill.
5. E. L. Frankel, B.A.Sc., *Frankel Bros.*	Toronto, Ont.
2. E. E. Freeland, B.A.Sc., *Hydrographic Surveys Branch.*	Ottawa, Ont.
1. J. R. Freeman, B.A.Sc.,	Toronto, Ont.
4.*H. P. Frid, *Building Contractor.*	Calgary, Alta.
3. R. J. Fuller, B.A.Sc., *City Architect's Dept.*	Toronto, Ont.
5.*J. L. Gooderham, B.A.Sc.,	Toronto, Ont.
3. R. E. Green, B.A.Sc.,	Toronto, Ont.
3. E. A. Greene, B.A.Sc., *Asst. Supt. Water and Light System.*	Peterborough, Ont.
3. H. G. Hall,	Woodstock, Ont.
1. G. M. Hamilton, B.A.Sc., *Asst. Engineer, Welland Ship Canal.*	Port Colborne, Ont.
2. M. B. Heebner, B.A.Sc., *With The Foundation Co.*	Coquitlam, B.C.
2. F. I. Helson, *With C.N. Ry.*	Newburgh, Ont.
3. H. R. Hill, B.A.Sc., *Hydro-Electric System.*	Toronto, Ont.
1. A. J. Huff, B.A.Sc.,	
1. K. Huffman,	30 Cowan Ave., Toronto, Ont.
1.*H. Hyatt, B.A.Sc.,	Toronto, Ont.
1.*R. H. Jarvis, B.A.Sc.,	Toronto, Ont.
1.*L. E. Jones, *Jones, Cornell Const. Co. Ltd.*	New Westminster, B.C.
1.*E. A. Kelly, *Construction Dept., C.P.R.*	119 Maryland St., Winnipeg, Man.
3.*M. Kirkwood, B.A.Sc., *Crocker-Wheeler Co.*	Ampire, N.J.
2.*J. Lanning, B.A.Sc., *Ben-My-Chree Mines.*	Via Atling, B.C.
2. M. I. Lieberman, B.A.Sc.,	Toronto, Ont.
3. G. L. Lillie, B.A.Sc., *With Toronto Hydro-Electric System.*	Toronto, Ont.
6. A. L. Long, B.A.Sc., *Chemist, Park, Blackwell & Co.*	Toronto, Ont.
1.*A. W. P. Lowrie, B.A.Sc.,	Toronto, Ont.
3. W. M. MacAndrew, B.A.Sc., *Allis-Chalmers-Bullock Co.*	Vancouver, B.C.
3.*R. V. Macaulay, B.A.Sc., *Traffic Supervisor, Bell Telephone Co. of Canada.*	Montreal, Que.

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*Diploma with honours.

1911—*Continued.*

2.*J. T. MacBain, *Union Carbide Co.*	Niagara Falls, N.Y.
1.*R. E. A. MacBeth, B.A.Sc.,	Toronto, Ont.
1. F. M. Macdonald, B.A.Sc., *Contractor.*	Toronto, Ont.
3.*W. S. MacKenzie, *With Canadian Linderman Co., Ltd.*	Woodstock, Ont.
1.*J. G. MacLaurin, B.A.Sc.,	Toronto, Ont.
1. J. B. McAndrew, B.A.Sc.,	St. Catharines, Ont.
3.*J. A. McEachren,	Strathburn, Ont.
3. R. W. McElroy, B.A.Sc.,	Toronto, Ont.
3. H. J. McEwen, B.A.Sc.,	Toronto, Ont.
3.*W. G. McGhie, B.A.Sc., *Canadian Crocker-Wheeler Co.*	St. Catharines, Ont.
3. D. A. McKenzie, B.A.Sc., *Meter Inspector, Toronto Hydro-Electric System.*	Toronto, Ont.
2. A. J. McLaren, B.A.Sc.,	Vancouver, B.C.
3. A. G. McLeish, *Calgary Power Co.*	Kananaskis, Alta.
1.*R. A. McLellan, B.A.Sc.,	Toronto, Ont.
2. W. B. McPherson, B.A.Sc., *Student at Law, Osgoode Hall.*	Toronto, Ont.
3. A. A. McQueen, B.A.Sc., *Power Dept., City Hall.*	Winnipeg, Man.
4.*H. H. Madill, B.A.Sc., *Demonstrator in Drawing, University of Toronto.*	Toronto, Ont.
3. J. C. Martin, B.A.Sc.,	Toronto, Ont.
3. C. A. Meadows, *With Dominion Bridge Co.*	Box 467, Lachine Locks, Que.
1. L. G. Mills, B.A.Sc.,	Toronto, Ont.
5. L. C. Mitchell,	Bay City, Mich.
2. J. A. Morphy, B.A.Sc.,	Toronto, Ont.
1. M. H. Murphy, B.A.Sc., *Contractor.*	Toronto, Ont.
3. E. H. Niebel, B.A.Sc., *Northern Electric and Manufacturing Co.*	Montreal, Que.
3. C. K. Nixon, B.A.Sc.,	Detroit, Mich.
3. E. S. Noble, B.A.Sc., *Canadian General Electric Co.*	Peterboro', Ont.
1. R. K. Northey, B.A.Sc.,	Toronto, Ont.
2. W. A. O'Flynn, B.A.Sc., *With the Copper Queen Smelter,*	Box 564, Douglas, Ariz.
1. W. V. Oke, B.A.Sc.,	Toronto, Ont.
2. J. A. Orr, B.A.Sc.,	Toronto, Ont.
3. J. S. Parker, B.A.Sc.,	Burk's Falls, Ont.
3.*J. H. Parkin, *Demonstrator in Mechanical Engineering, University of Toronto.*	Toronto, Ont.
1.*J. McD. Patton, B.A.Sc.,	Toronto, Ont.
3. C. L. Pearson, *With Calgary Power Co.*	Kananaskis, Alta.
2. S. J. Pepler,	Huron St., Toronto, Ont.
3.*W. J. Perrin, B.A.Sc.,	Toronto, Ont.
1. B. W. Pick, B.A.Sc., *With Smith & Phillips.*	Regina, Sask.

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*Diploma with honours.

1911—*Continued.*

3.*E. H. Porte, Aylmer West, Ont.
1.*F. M. Pratt, B.A.Sc., Ottawa, Ont.
Res. Engineer, Const. Dept. E. B. Eddy Co.
4. H. Pullan, Toronto, Ont.
With E. Pullan.
1. L. J. Quinlan, B.A.Sc., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
1.*J. E. Ratz, B.A.Sc., Ottawa, Ont.
Dominion Observatory.
1. F. N. Read, B.A.Sc., Kerrobert, Sask.
Supt. for T. W. Holsworth & Co.
4. E. V. Reid, Montreal, Oue.
Draftsman, Ross & Macdonald.
1.*W. A. Richardson, B.A.Sc., Toronto, Ont.
Mackenzie, Mann & Co.
1.*W. E. Robinson, B.A.Sc., Toronto, Ont.
1. H. L. Roblin, B.A.Sc., Toronto, Ont.
3. L. W. Rothery, B.A.Sc., Milwaukee, Wis.
Allis-Chalmers Manufacturing Co.
4.*T. L. F. Rowe, Whitby, Ont.
Structural Engineer, Hospital for Insane.
3. A. S. Runciman, Calgary, Alta.
With Canadian Westinghouse Co.
3. F. G. Rutley, B.A.Sc.
1. E. M. Salter, Nipigon, Ont.
Draftsman, C.N.O. Ry.
1. F. R. Scandrett, B.A.Sc., Toronto, Ont.
5.*J. W. Scott, B.A.Sc., Toronto, Ont.
Medical Health Dept.
3. N. D. Seaton, B.A.Sc., Peterboro', Ont.
Canadian General Electric Co.
1. N. Sharpe, Winnipeg, Man.
With Allan Findlay, D.L.S., M.L.S.
4.*P. Sheard, Toronto, Ont.
1.*W. A. Sibbett, Bracebridge, Ont.
2.*C. P. Sills, B.A.Sc., Ottawa, Ont.
Department of the Interior.
1.*K. H. Smith, Kamloops, B.C.
Dept. of the Interior.
3. M. L. Smith, B.A.Sc., Toronto, Ont.
Laboratory Engineer, Massey-Harris Co.
1. R. G. Sneath, Melfort, Sask.
McArthur, Murphy & Underwood.
3.*G. E. Squire, B.A.Sc., Toronto, Ont.
Fellow in Drawing, University of Toronto
3. W. S. Steele, B.A.Sc., Brooklyn, N.Y.
Brooklyn Rapid Transit Co.
5.*A. E. Stewart, B.A.Sc., Toronto, Ont.
3.*R. O. Stewart, B.A.Sc., Moncton, N.B.
Bridge Dept. Intercolonial Ry.
3.*R. A. Story, B.A.Sc., Vancouver, B.C.
B.C. Telephone Co.
1. C. F. Szammers, 1367 King St., W. Toronto, Ont.

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*Diploma with honours.

1911—*Continued.*

3. R. TAYLOR, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
1. J. B. TEMPLE, B.A.Sc., Montreal, Que.
Dominion Bridge Co.
3. G. C. THOMAS, Barrie, Ont.
Assistant Manager, Simcoe Fruits, Ltd.
1. R. D. TORRANCE, B.A.Sc., Winnipeg, Man.
With Ford-Lewis Co. Ltd.
1. W. G. TOUGH, B.A.Sc., Toronto, Out.
With Roman Stone Co.
1.*N. VICKERS, North Battleford, Sask.
2. J. H. C. WAITE, B.A.Sc., Cobalt, Ont.
Comet Mine.
1. W. D. WALCOTT, B.A.Sc. Toronto, Ont.
Roadways Dept., City Hall.
3. G. L. WALLACE, B.A.Sc., Toronto, Ont.
Demonstrator in Physics, University of Toronto.
1. A. WARDELL, B.A.Sc., Toronto, Ont.
1. F. E. WATSON, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
3.*P. G. WELFORD, B.A.Sc., Galt, Ont.
Canadian Machinery Corporation.
2. A. G. WHELER, B.A.Sc., Norfolk, Va.
Sec'y-Treas. J. R. Wheler Sons Co.
3. G. H. WILKES, B.A.Sc., Toronto, Ont.
With Massey-Harris Co.
5.*E. R. WILLIAMS, Shawenegan Falls, Que.
Metallurgist, Northern Aluminium Co.
3.*H. A. WILSON, Glenora, Ont.
Supt., J. C. Wilson & Co., Mechanical Engineers.
1. W. G. WORDEN, B.A.Sc., Lac Du Bonnet, Man.
Hydrographic Survey.
1.*W. J. T. WRIGHT, B.A.Sc., Toronto, Ont.
1. F. H. WRONG, Toronto, Ont.
2. W. H. WYLIE, B.A.Sc., Timmins, Ont.
Hollinger-Timmins Mine.
3. H. K. WYMAN, Peterboro, Ont.
Canadian General Electric Co.
3. L. P. YORKE, Edmonton, Alta.
Wiring Inspector, City of Edmonton.
1. S. YOUNG, B.A.Sc., D. & S.L.S., Regina, Sask.
Public Works Dept.
3.*A. YOUNG, B.A.Sc., Toronto, Ont.
Demonstrator in Applied Mechanics, University of Toronto.
1. W. E. ZINKAN, Southampton, Ont.
Dominion Land Surveyor.

Owing to change of course from three to four years, there were no graduates in 1912.

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*Diploma with honours.

1913.

7.*R. J Allen, B.A.Sc.,	Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.	
3.*A. S. Anderson, B.A.Sc.	455 Hunter St., Peterboro, Ont.
1.*C. R. Avery, B.A.Sc.	
4.*L. C. M. Baldwin, B.A.Sc.	
1. F. W. Beatty, B.A.Sc.	Pembroke, Ont.
1.*W. B. Beatty, B.A.Sc.	Sarnia, Ont.
2. C. A. Bell,	Toronto, Ont.
1.*B. S. Black, B.A.Sc.	
1. D. Blain, B.A.Sc.,	Toronto, Ont.
Draftsman, Canada Foundry Co.	
7. E. R. Bonter, B.A.Sc.,	Montreal, Que.
Crocker-Wheeler Co.	
7.*L. R. Brereton.	
2. T. R. Buchanan, B.A.Sc.,	Copper Cliff, Ont.
Canadian Copper Co.	
7.*W. B. Buchanan, B.A.Sc.	Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.	
3. B. H. A. Burrows, B.A.Sc.	
2. W. B. Caldwell, B.A.Sc.	Cobalt, Ont.
1. O. L. Cameron, B.A.Sc.	
1. L. L. Campbell, B.A.Sc.	
3.*R. M. Carmichael, B.A.Sc.	
2. H. A. Clark,	Wayland, Ont.
6.*G. E. Clarkson, B.A.Sc.,	Leeds, Eng.
3.*B. D. Clegg, B.A.Sc.,	
7. J. H. Coleman, B.A.Sc.,	Toronto, Ont.
Toronto Electric Light Co.	
1.*G. M. Cook, B.A.Sc.,	Detroit, Mich.
Trussed Concrete Steel Co.	
4.*B. R. Coon, B.A.Sc.,	Temple Bldg., Toronto.
Architect.	
2. W. T. Curtis, B.A.Sc.,	Cobalt, Ont.
1. A. J. Dates, B.A.Sc.,	Toronto, Ont.
Harkness & Oxley, Consulting Engineers.	
7. E. L. Deitch, B.A.Sc.	
2.*R. W. Diamond, B.A.Sc.,	Anaconda, Mont.
Anaconda Mining Co.	
7. W. G. Duncan, B.A.Sc.	Port Dover, Ont.
1. F. R. Fiddes, B.A.Sc.	
1. D. H. Fleming, B.A.Sc.,	Toronto, Ont.
Sewers Dept. City Hall.	
3. F. F. Foote, B.A.Sc.	St. Catharines, Ont.
1.*J. S. Galbraith, B.A.Sc.,	Toronto, Ont.
Demonstrator in Drawing, University of Toronto.	
1. H. M. Goodman, B.A.Sc.	
1. A. G. Gray, B.A.Sc.	
1.*E. R. Gray, B.A.Sc.	Toronto, Ont.
Divisional Engineer, City Sewer Dept.	
3. A. J. Gray, B.A.Sc.	
7. J. P. Hadcock, B.A.Sc.	
1. H. A. Hawley, B.A.Sc.	
7. H. C. Harris.	
1.*R. L. Hearn, B.A.Sc.	
1.*H. J. Heinonen, B.A.Sc.	
1.*R. A. Henry, B.A.Sc.	Lachine, Que.
Dominion Bridge Co.	

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*Honours in Final Year.

1913—*Continued.*

7.*T. A. Hill, B.A.Sc.	
1.*O. Holden, B.A.Sc.	
1. J. T. Howard, B.A.Sc.,	Toronto, Ont.
Demonstrator in Drawing, University of Toronto.	
7.*T. F. Howlett, B.A.Sc.	
1. E. T. Ireson, B.A.Sc.	
1. R. L. Junkin, B.A.Sc.	
7.*S. S. Kelly,	
7. A. E. Kerr, B.A.Sc.	
7. C. E. Kilmer.	
1. J. S. Laing, B.A.Sc.	
4.*H. D. Livingston, B.A.Sc.	
1.*K. F. Mickleborough, B.A.Sc.	
7.*G. J. Mickler, B.A.Sc.,	Toronto, Ont.
Hydro-Electric Commission.	
1. N. C. Millman, B.A.Sc.	
1. F. J. Mulqueen, B.A.Sc.	
1.*W. C. Murdie, B.A.Sc.	Toronto, Ont.
Fellow in Physics, University of Toronto.	
2. D. A. S. Mutch, B.A.Sc.,	Porcupine, Ont.
Dome Mines.	
1.*H. R. Mackenzie, B.A.Sc.,	Regina, Sask.
Inspecting Engineer, Board of Highway Commissioners.	
1. A. R. MacPherson, B.A.Sc.	
6.*K. S. MacLachlan, B.A.Sc.	
1. W. H. MacTavish, B.A.Sc.	
1. T. V. McCarthy, B.A.Sc.,	Toronto, Ont.
Waterworks Dept., City Hall.	
1.*R. S. McConnell, B.A.Sc.	
1. W. L. McFaul, B.A.Sc.	
2.*K. L. Newton, B.A.Sc.,	Copper Cliff, Ont.
Canadian Copper Co.	
5.*C. J. Otto, B.A.Sc.	
1.*N. F. Parkinson, B.A.Sc.,	Toronto, Ont.
Public Health Dept.	
7.*J. W. Peart, B.A.Sc.	
1.*E. Perron, B.A.Sc.	
1. H. C. Quail, B.A.Sc.	
7.*E. G. Ratz,	Hamilton, Ont.
With Canadian Westinghouse Co.	
1.*J. M. Riddell, B.A.Sc.	
1.*J. E. Ritchie, B.A.Sc.,	Toronto, Ont.
Secretary, Engineering Society, University of Toronto.	
1.*C. S. Robertson, B.A.Sc.,	Toronto, Ont.
Public Health Dept.	
7.*C. C. Rous, B.A.Sc.,	Montreal, Que.
With Henry Holgate, E.E.	
7. C. H. Russell, B.A.Sc.	
7.*A. A. Scarlett, B.A.Sc.	
1.*L. Sewell, B.A.Sc.	
7.*M. C. Sharp, B.A.Sc.	
3.*K. E. Shaw, B.A.Sc.	

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* Honours in Final Year.

1913—*Continued.*

3.*F. R. Sims, B.A.Sc., Ottawa, Ont.
Dept. of Customs.
2.*D. G. Sinclair, B.A.Sc., Copper Cliff, Ont.
Canadian Copper Co.
4.*R. W. Soper, B.A.Sc.
1. W. A. Spellman, B.A.Sc., Toronto, Ont.
City Engineer's Dept.
7.*J. M. Strathy.
1.*J. M. Thompson, B.A.Sc.
2.*W. K. Thompson, B.A.Sc. Ottawa, Ont.
Top Surveys Branch, Dept. of Interior.
7.*D. J. Thomson, Toronto, Ont.
Demonstrator in Mechanical Engineering, University of Toronto.
7. T. E. Torrance, B.A.Sc.
2. R. M. Trow, B.A.Sc.
1.*W. G. Ure, B.A.Sc.
1.*C. F. von Gunten, B.A.Sc., 17 Indian Rd. Cres., Toronto, Ont.
3. R. E. Watts, B.A.Sc.
3.*C. A. Webster, B.A.Sc.
4.*H. Webster, B.A.Sc., Paris, France.
Post-Graduate work in Architecture.
1. D. H. Weir, B.A.Sc.
1. W. S. Winters, B.A.Sc.
1. R. F. B. Wood, B.A.Sc., Toronto, Ont.
With T. & L. M. Wood.
7.*A. J Wright, B.A.Sc.
7. R. B. Young, B.A.Sc.

---

* Honours in Final Year

CERTIFICATES.

MINERALOGY AND ASSAYING.

1896. G. JOHNSTON.
1897. E. B. WEBSTER.
1901. G. A. HUNT.

ELECTRICITY.

1896. A. T. TYE, c/o Empresa Hanseatica, Barranquilla, Columbia, South America.
1898. A. N. McMILLAN, Penetanguishene, Ont.
1900. A. H. SMITH.
1896. E. I. SIFTON, London, Ont.
Manager, London Electric Construction Co.
1903. W. ELWELL (deceased).

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

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Adams, O. F	1910
Aitken, J	1911
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Alexander, J. H	1904
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Allan, L. F	1908
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Bartley, T. H	1911
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Berry, E. W	1910
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Betts, H. H	1906
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Billings, J. H	1911
Bingham, H. C	1910
Birchard, E. R	1909
Bissett, D. G	1910
Bissett, G. W	1906

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Brackinreid, T. W	1911
Brady, W. S	1907
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Brock, A. F	1910
Brock, W. M	1911
Brodie, W. M	1895
Broughton, G. H	1907
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Brown, D. B	1888
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Code, T. F. (deceased)	1904
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Cole, W. E. (deceased)	1908
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Collett, W. C	1908
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Colquhoun, G. A	1910
Coltham, G. W	1909
Conlon, F. T	1902
Connell, C. B. B	1907
Connor, H. V	1902
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Cook, A. S	1911
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Cook, W. A. Mc	1906
Coon, B. R	1913
Cooper, C	1899
Corman, W. E	1909
Cornell, C. W	1911
Corrigan, G. D. (deceased)	1890
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Cory, R. Y	1908
Coulson, C. L	1903
Cousins, E. L	1906
Coulthard, R. M	1899
Cowan, W. A	1904
Cowper, G. C	1907
Coyne, H	1908
Craig, J. A	1899
Craig, J. H	1910
Craig, S. E	1904
Creighton, A. G	1906
Crerar, S. R	1904
Crosby, N. L. R	1905
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Crouch, M. E	1911
Cruthers, W. M	1911
Culbert, M. T. (deceased)	1902
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Cumming, R	1902
Cumming, J. D	1908
Cummins, O. F	1911
Cunerty, T. J	1911
Cunningham, C. H	1911
Cunningham, R. H	1909
Currie, W. M	1904
Curtis, W. T	1913
Curzon, J. H	1911

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Dahl, A. D	1908
Dallyn, F. A	1909
D'Alton, F. K	1911
Daniels, W. N	1906
Danks, F. A	1908
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Dann, E. M	1909
Darling, E. H	1898
Darroch, J	1908
Dates, A. J	1913
Davis, R	1907
Davis, A. I	1909
Davis, H. W	1909
Davis, H. C	1909
Davis, W. B	1911
Davison, J. E	1900
Davison, A. E	1903
Dawson, I. H	1909
Deacon, T. R	1891
Dean, C. D	1910
Death, N. P. F	1906
DeCew, J. A	1896
De Guerre, F. C	1911
Deitch, E. L	1913
Delahaye, W. H	1909
De Laporte, A. V	1910
Depew, H. H	1904
Derham, W. P	1909
Diamond, R. W	1913
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Dickinson, E. D	1900
Dill, C. W	1891
Dixon, H. A	1900
Dobbin, R. L	1910
Dobson, W. P	1910
Dobie, J. S	1895
Dodds, W. A	1909
Doorly, H. C. (deceased)	1908
Douglas, R. H	1908, 1909
Douglas, W. E	1902
Downing, F. H	1911
Duff, J. A. (deceased)	1890
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Duggan, G. H	1883
Dunbar, W. B	1911
Duncan, J. M	1910
Duncan, W. G	1913
Dundass, C. S	1906
Dunlop, R. J	1902
Dunn, T. H	1893
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Eason, D. E	1901
Eckert, C. H	1911
Edwards, W. M	1902
Edwards, C	1908
Elliot, J. A	1911
Elliott, G. R	1911
Elliott, C. F	1911
Elliott, H. P	1896
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Elder, A. J	1904
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Emery, V. H	1910
Empey, J. M	1902
English, A. B. (deceased)	1890
Evans, S. D	1907
Evans, S. L	1908
Evans, W. J	1910
Ewart, J. A	1894
Ewart, F. R	1907
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Falconer, F. S	1909
Fargey, T. A	1909
Farrell, K. A	1911
Farrelly, T. J	1911
Fear, S. L	1906
Fensom, C. J	1903
Ferguson, C. R	1910
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Ferguson, J. B	1909
Ferguson, J. W	1910
Fergusson, A. T	1909
Fierheller, H. S. (deceased)	1905
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Fisken, J. B. K	1910
Flanagan, O. L	1908
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Fletcher, F. T	1910
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Flint, C	1908
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Flynn, C. C	1911
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Forward, E. A	1897
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Francis, Walter J	1893
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Frankel, E. L	1911
Fraser, A	1910
Fredin, J	1910
Freeland, E. E	1911
Freeman, T. E	1909
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Frid, H. P	1911
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Fuce, E. O	1903
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Holcroft, H. S	1900
Holden, O	1913
Holmes, A. E	1909
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Hopkins, P. E	1910
Hopkins, R. H	1906
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Houston, R. S	1906
Howard, J. T	1913
Howlett, T. F	1913
Huber, W	1906
Huether, D. J	1908
Huether, A. D	1908
Huff, A. J	1911
Huffman, K	1911
Hughes, C	1909
Hull, H. S	1895
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Hunter, A. N	1908
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Hyatt, H	1911
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Irwin, H	1909
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Jackson, W	1907
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Jackson, J. E	1909
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James, E. A	1904
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Jarvis, R. H	1911
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Jeffrey, D	1882
Jermyn, P. V	1904
Job, H. E	1894
Johnson, C. C	1909
Johnston, D. M	1902
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Johnston, H. C	1910
Johnston, A. C	1894
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Johnston, H. A	1900
Johnston, J. C	1900

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Johnston, C. K	1903
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Johnston, C	1906
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Jones, J. E	1894
Jones, L. E	1911
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Kay, E. W	1907
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Keffer, A. H. E	1909
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Keith, D. F	1907
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Kelly, S. S	1913
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Kirkwood, M	1911
Kirwan, G. L	1910
Kirwan, P. T	1910
Klingner, L. W	1907
Klotz, H. N	1909
Knight, R. H	1902
Knight, S	1910
Kormann, J. S	1898
Kribs, G	1905

L

Laidlaw, J. T	1893
Laidlaw, R. A	1901
Laing, W. F. (deceased)	1896
Laing, A. T	1892
Laing, J. S	1913
Laing, P. A	1905
Laird, R	1886
Lamb, F. C	1907
Lamont, A. W	1909
Lane, A. (deceased)	1891
Lang, A. G	1903
Lang, J. L	1906
Langley, C. E	1892
Langmuir, F. L	1902
Langmuir, C. B	1909
Lanning, J	1911
Larkworthy, W. J. (deceased)	1904
Laschinger, E. J	1892
Lash, F. L	1893
Lash, N. M	1894
Latham, R	1899
Latornell, A. J	1903
Latornell, A	1905
Lavrock, J. E	1898
Lawler, E. R	1910
Lawson, W. L	1892
Lawrie, R. R. (deceased)	1896
Leaver, C. B	1910
Lee, W. A. (deceased)	1892
Lee, R. G	1910
Leighton, J. W	1905
Leitch, J. N. (deceased)	1910
Lennox, A. E	1909
LePan, A. D	1907
Leslie, J. N. M	1908
Lewis, F. C	1908
Lieberman, M	1911
Lillie, G. L	1911
Lindsay, J. H	1907
Linton, A. P	1906
Livingston, H. D	1913
Lloyd, N. C. A	1909
Long, A. L	1911
Longstaff, J. C	1910
Lott, A. E	1887
Loucks, R. W. E	1909
Loudon, T. R	1905
Lowrie, A. W. P	1911
Ludgate, B. A	1885
Lumbers, W. C	1901
Lynar, H. R	1908

Mac

Macallum, A. F	1893
MacAndrews, W. M	1911
Macaulay, R. V	1911
MacBain, J. T	1911
MacBeth, C. (deceased)	1896
MacBeth, R. E. A	1911
Macdonald, A. D	1910
Macdonald, J. B	1910
Macdonald, J. A	1910
Macdonald, G. A	1910
Macdonald, F. M	1911
Macdougall, A. C	1901
Macfarlane, E. D	1909
MacGregor, A. E	1910
MacKay, A. G	1907
MacKay, J. T	1902
MacKay, E. G	1910
MacKenzie, H. R	1913
MacKenzie, K. A	1906
MacKenzie, W. S	1911
Mackinnon, J. G	1909
Mackinnon, W	1906
Mackintosh, D	1898
Maclachlan, K. S	1913
Maclachlan, W	1906
MacLachlan, W. A	1909
MacLaurin, J. G	1911
Maclean, B. A	1909
MacLennan, G. G	1910
MacLeod, G	1907
MacLeod, D. D	1910
MacMillan, G	1901
MacMurchy, J. A	1896
MacMurchy, H. G	1910
Macpherson, N. W	1909
MacPherson, A. R	1913
MacTavish, H. J	1910
MacTavish, W. H	1913

Mc

McAllister, J. E	1891
McAllister, A. L	1893
McAlpine, D. D	1909
McAndrews, J. B	1911
McAree, J. (deceased)	1882
McArthur, R. E	1900
McArthur, A. S	1909
McAuslan, H. J	1903
McBride, A. H	1902
McBride, T. C	1910
McCarthy, T. V	1913
McCollum, C. R	1909
McConnell, A. W	1906
McConnell, R. S	1913
McCordick, A. S	1909
McCuaig, O. B	1904
McCuaig, P. J	1909
McCulloch, A. L	1887
McCurdy, J. A. D	1907
McDougall, J. (deceased)	1884
McDougall, S. G	1910
McDowall, R	1888
McEachren, J. A	1911
McElhanney, T. A	1910
McElroy, R. W	1911
McEntee, B	1892
McEwen, G. G	1904
McEwen, H. J	1911
McFarlen, G. W	1888
McFarlen, T. J	1893
McFarlane, J. A	1903
McFarlane, W. G	1904
McFarlane, J. B	1907
McFaul, W. L	1913
McGarry, P. J	1910
McGeorge, W. G	1908
McGhie, W. G	1911
McGibbon, C. P	1904
McGorman, S. E	1906
McGowan, J	1895
McGregor, W. W. (deceased)	1905
McGregor, J. M	1908
McGugan, D. J	1907
McIlwraith, D. G	1906
McIntosh, A. H	1907
McIntosh, W. G	1909
McKay, O	1885
McKay, C. (deceased)	1904
McKay, W. N	1895
McKechnie, F. H	1909
McKenzie, D. A	1911
McKenzie, D. W	1905
McKenzie, J. A	1906
McKim, L. R	1910
McKinnon, H. L	1895
McLaren, A. J	1911
McLean, C. A	1905
McLean, W. N	1905
McLean, L. A. (deceased)	1908
McLeish, A. G	1911
McLellan, R. A	1911
McLennan, A. L	1902
McLeod, G	1909
McMaster, A. T. C	1901
McMaster, W. A. A	1908
McMillan, J. G	1900
McMillan, D	1904
McMillan, V	1909

McMordie, H. C.	1908
McNab, J. V.	1906
McNaughton, A. L.	1903
McNaughton, F. W.	1898
McNeill, F. W.	1907
McNiven, J.	1910
McPherson, A. J.	1893
McPherson, J. A.	1906
McPherson, W. B.	1911
McQuarrie, M. K.	1907
McQueen, A. A.	1911
McRoberts, A. A.	1908
McSloy, J. I.	1910
McTaggart, A. L.	1894
McVean, H. G.	1901

M

Mace, F. G.	1905
Madden, J. F. S.	1902
Madge, N. G.	1908
Madill, H. H.	1911
Main, W. T.	1893
Maisonville, A. W. R.	1910
Malcolmson, W. S.	1907
Malone, J. E.	1908
Manning, N. H.	1909
Manson, G. J.	1904
Manson, A. B.	1909
Marani, C. J.	1888
Marani, V. G.	1893
Marlatt, K. D.	1908
Marr, N.	1910
Marriott, F. G.	1903
Marrs, C. H.	1902
Marrs, D. W.	1906
Marshall, R. J.	1908
Marshall, S. A.	1907
Martin, F.	1887
Martin, J. C.	1911
Martin, W. H.	1910
Martin, T.	1896
Martindale, E. S.	1909
Martyn, O. W.	1909
Mason, D. H. C.	1907
Matheson, W. C.	1901
Mathison, P.	1901
Matthews, A. C.	1910
Maus, C. A.	1903
Maxwell, W. A.	1906
Maynard, H. V.	1907
Meader, C. H.	1910
Meadows, C. A.	1911
Meadows, W. W.	1895
Melson, J. W.	1907
Menzies, J. M.	1906
Mennie, R. S.	1902
Merrill, E. B.	1891
Merriman, H. O.	1910
Middleton, H. T.	1901
Mickle, G. R.	1888
Mickleborough, K. F.	1913
Mickler, G. J.	1913
Mill, F. X. (deceased)	1889
Miller, D. J.	1910
Miller, L. Haun	1900
Miller, M. L.	1903
Miller, L. R.	1906
Milligan, G. L.	1908
Milligan, F. S.	1910
Millman, N. C.	1913
Mills, G. G.	1907
Mills, P. E.	1910
Mills, L. G.	1911
Minns, J. B.	1907
Minty, W.	1894
Milne, C. G. (deceased)	1892
Mines, W.	1893
Mitchell, P. H.	1903
Mitchell, L. C.	1911
Mitchell, C. H.	1892
Mitchell, B. F.	1906
Mitchell, A. B.	1908
Moberley, H. K.	1889
Moffatt, R. W.	1905
Molesworth, G. N.	1907
Molesworth, J. C. P. (deceased)	1908
Monds, W.	1899
Monk, E. D.	1908
Moody, F. H.	1908
Montague, F. F.	1906
Montgomery, R. H.	1903
Moore, H. H.	1902
Moore, E. E.	1904
Moore, J. H.	1888
Moore, J. E. A.	1891
Moore, F. A.	1903
Moore, W. J.	1906
Moore, J. M.	1907
Moorhouse, W. N.	1904
Morden, L. W.	1905
Morgan, J. P.	1910
Morice, J. H.	1908
Morley, P. F.	1907
Morphy, J. A.	1911
Morris, J. L.	1881
Morris, C. A.	1909
Morton, G.	1909
Mowbray, F. E. H.	1908
Mullins, E. E.	1903
Mulqueen, F. J.	1913

Munro, A. H	1910
Munro, W. H	1904
Munro, G. R	1905
Munro, F. V	1909
Murdie, W. C	1913
Murdock, C. R	1906
Murphy, C. J	1906
Murphy, M. H	1911
Murray, E. W	1907
Murray, J. D	1907
Murray, W. P	1908
Mutch, D. A. S	1913

N

Nash, J. C	1901
Nash, T. S	1902
Near, W. P	1906
Neelands, E. V	1900
Neelands, E. W	1907
Neelands, R. E. K	1907
Neelands, R	1906
Neilly, B	1907
Neville, E. A	1909
Nevitt, I. H	1903
Newhall, V. A	1910
Newman, W	1891
Newton, J	1909
Newton, K. L	1913
Newton, W. E	1910
Nichol, F. T	1910
Nicholson, C. J	1894
Nicklin, W. G	1905
Niebel, E. H	1911
Nixon, C. K	1911
Noble, E. S	1911
Northey, R. K	1911
Nourse, A. E	1907

O

O'Brien, E. D	1905
Odell, L. S	1909
O'Donnell, V. J	1909
O'Flynn, W. A	1911
O'Grady, W. deC	1908
O'Hearn, J. J	1909
Oke, W. V	1911
Oliver, E. W	1903
Oliver, J. P	1903
O'Neil, C. M	1910
Orr, J. A	1911
O'Sullivan, J. J	1907
Otto, C. J	1913

P

Pace, J. D	1903
Pace, G	1904
Pae, A. W	1909
Palmer, C. E	1910
Pardoe, W. S	1904
Paris, J	1904
Park, D. G	1906
Parke, J	1904
Parker, G. C	1910
Parker, J. S	1911
Parkin, J. H	1911
Parkinson, N. F	1913
Parsons, J. L. R	1901
Paterson, G. W	1906
Paton, T. K	1907
Patten, B. B	1903, 1905
Patton, J. McD	1911
Patterson, J	1899
Paulin, F. W	1907
Peaker, W. J	1904
Pearce, K. K	1910
Pearson, C. L	1911
Peart, J. W	1913
Peckover, H. J	1908
Pedder, J. R. (deceased)	1890
Pepler, S. J	1911
Pequegnat, M	1908
Perrin, W. J	1911
Perron, E	1913
Petry, A. M	1909
Pettingill, R. E	1906
Philp, D. H	1903
Phillips, E. H	1900
Phillips, H. G	1908
Phillips, C. H	1910
Phillips, E. P. A	1905
Pick, B. W	1911
Pickering, A. E	1904
Pigott, R. B	1909
Pinhey, C. H	1887
Pinkney, D. H	1903
Pivnick, M	1908
Playfair, N. L	1892
Plunkett, T. H	1903
Ponton, G. M	1909
Pope, A. S. H	1899
Porte, E. H	1911
Porte, W. B	1906
Porter, C. J	1909
Potter, R. B	1907

Powell, G. G	1902
Power, G. H	1901
Prentice, J. M. (deceased)	1892
Price, H. W	1901
Pratt, F. M	1911
Prochnow, F. E	1907
Proctor, A. I	1909
Proctor, E. M	1908
Procunier, J. F	1907
Proudfoot, H. W. (deceased)	1897
Publow, C. F	1908
Pullan, H	1911
Pullen, E. F	1905
Purser, R. C	1906
Pye, D. E	1910

Q

Quail, H. C	1913
Quail, J	1909
Quance, G. E	1907
Quinlan, L. J	1911

R

Raine, H	1907
Ramsay, W. S	1910
Ramsey, G. L	1905
Ramsperger, A. F	1909
Rannie, J. L	1907
Ransom, J. T	1908
Ratz, E. G	1913
Ratz, J. E	1911
Ratz, W. F. (deceased)	1902
Raymer, A. R	1884
Rayner, G. W	1905
Raymond, D. C	1904
Read, F. N	1911
Redfern, B. J	1910
Redfern, W. B	1908
Redfern, C. R	1909
Reid, E. V	1911
Reid, F. B	1904
Revell, G. E	1899
Richards, E	1899
Richardson, F. L	1908
Richardson, G. H	1888
Richardson, C. W. B	1907
Richardson, W. A	1911
Ricker, H. A	1908
Riddell, J. M.	1913
Riddell, M. R	1904
Ridler, A. A	1907
Ritchie, H. C	1910
Ritchie, J. E.	1913
Roaf, J. R	1900
Robertson, C. S.	1913
Robertson, F. A	1908
Robertson, H. D	1902
Robertson, J	1884
Robertson, J. M	1893
Robertson, N. R	1906
Robertson, A. R	1908
Robertson, D. F	1903
Robinson, J. (deceased)	1891
Robinson, F. J	1895
Robinson, A. H. A	1897
Robinson, L. H	1904
Robinson, W. A	1908
Robinson, R. C	1908
Robinson, W. E	1911
Roblin, H. L	1911
Roddick, J. O	1906
Rogers, J	1887
Rogers, C. H	1906
Rogers, L. J	1908
Rolph, H	1894
Rolfson, O	1906
Rose, K	1888
Rose, R. R	1908
Rosebrugh, T. R	1888
Ross, J. A	1892
Ross, J. E	1888
Ross, D	1908
Ross, R. A	1890
Ross, K. G	1906
Ross, R. B. (deceased)	1905
Ross, R. C	1906
Ross, O. W	1910
Rothery, L. W	1911
Rothwell, T. E	1905
Rothwell, H. E	1907
Rous, C. C	1913
Rowe, T. L. F	1911
Roxburgh, G. S	1904
Rounthwaite, C. H. E	1900
Routly, H. T	1906
Rubidge, W. F. B	1910
Runciman, A. S	1911
Russell, C. H	1913
Russell, W. B	1891
Russel, R	1893
Rust, H. P	1901
Rutherford, F. N	1904
Rutledge, L. T	1909
Rutley, F. G	1911
Ryckman, J. H	1906

S

Salter, E. M	1911
Sanders, W. K	1906
Sanderson, A. U	1909
Sara, R. A	1909
Sauer, M. V	1901
Saunders, G. A	1899
Saunders, H. W	1900
Scandrett, F. C	1911
Scarlett, A. A	1913
Scheibe, R. R	1896
Scheibe, H. M	1903
Schlarbaum, A	1909
Schofield, C. A	1907
Schwenger, C. E	1909
Scott, C. A	1909
Scott, G. S	1905
Scott, W. A	1906
Scott, W. F	1897
Scott, J. W	1911
Seaton, N. D	1911
Secord, A. O	1908
Sedgwick, A.	1909
Segre, B. H	1909
Seibert, F. V	1909
Serson, H. V	1905
Sewell, L.	1913
Seymour, H. L	1903
Shanks, T	1899
Sharp, M. C.	1913
Sharpe, N	1911
Shaw, J. H	1898
Shaw, K. E	1913
Shaw, W. E. V	1908
Shaw, M. R	1909
Shaw, W. C	1910
Sheard, P	1911
Shearer, H. F	1908
Sheply, J. D	1904
Sheppard, A. C. T	1907
Shields, J. D	1894
Shipley, A. E	1898
Shirriff, C. H	1905
Sibbett, W. A	1911
Sills, C. P	1911
Silvester, G. E	1891
Sims, F. R.	1913
Sinclair, D. (deceased)	1902
Sinclair, D. G	1913
Sisson, C. E	1905
Slater, F. W	1904
Smallpiece, F. C	1898
Smart, R. S	1904
Smiley, R. W	1897
Smith, A. N	1892
Smith, A	1894
Smith, H. G. (deceased)	1903
Smith, R. W	1898
Smith, J. H	1903
Smith, D. A	1904
Smith, K. H	1911
Smith, M. L	1911
Smith, W. C	1910
Smith, G. E	1910
Smith, F. L	1910
Smith, F. R	1907
Smither, W. J	1904
Smithrim, E. R	1907
Snaith, W	1907
Sneath, R. G	1911
Soper, R. W	1913
Sparling, M. W	1909
Speller, F. N	1893
Spellman, W. A.	1913
Spence, J. J	1909
Spencer, A. C	1907
Spotton, A. K	1894
Spry, R. J	1910
Squire, G. E	1911
Squire, R. H. (deceased)	1893
Stamford, W. L	1908
Starr, R. H	1908
Stayner, D. S	1909
Steele, I. J	1902
Steele, A. L	1910
Steele, W. S	1911
Stern, E. W	1884
Steven, H. M	1910
Stevenson, W. H	1901
Stewart, A. E	1911
Stewart, J. A	1898
Stewart, D. L. N	1905
Stewart, M. A	1905
Stewart, R. O	1911
Stewart, W. M	1906
Stewart, G. S	1907
Stewart, A. W. J	1908
Stewart, N. C	1909
Stiles, J. A	1907
Stiver, J. L	1907
St. Lawrence, J	1908
Stock, J. J	1908
Stock, P. H	1909
Stocking, F. T	1895
Stone, L. I	1910
Story, R. A	1911
Strathy, J. M.	1913
Street, J. C	1909
Stroud, S	1909
Stuart, H. B	1908
Stuart, J. L. G	1907–1908
Stubbs, W. F	1905
Stull, W. W	1897

Sturdy, N. H	1905
Summers, G. F	1907
Sutcliffe, H. W	1907
Sutherland, A. L	1910
Sutherland, W. H	1902
Sutherland, C. C	1909
Swan, W. G	1905
Swan, R. G	1909
Sword, A. D	1908–1909
Sykes, F. H	1905
Symmes, H. D	1891
Szammers, C. F	1911

T

Tate, H. W	1909
Taylor, R	1911
Taylor, T	1902
Taylor, W. V	1893
Taylor, A	1900
Taylor, J. W. R	1908
Taylor, W. E	1908
Teasdale, C. M	1902
Temple, J. B	1911
Tennant, D. C	1899
Tennant, W. C. (deceased)	1900
Ternan, E. A	1910
Thom, W. H	1910
Thomas, G. C	1911
Thomas, V. C	1908
Thompson, J. M	1913
Thompson, P. M	1907
Thompson, E. A	1909
Thompson, H. B	1910
Thompson, R. M. A	1910
Thompson, W. K	1913
Thomson, D. J	1913
Thomson, T. K	1886
Thomson, R. W	1892
Thomson, S. E	1904
Thomson, L. R	1905–1907
Thomson, J. E	1906
Thomson, O. R	1907
Thorne, S. M	1900
Thornley, J. H	1908
Thorold, F. W	1900
Tillson, E. D	1905
Tipper, G. A	1909
Titus, C. G	1910
Toms, C. G	1908
Torrance, R. D	1911
Torrance, T. E	1913
Tough, W. G	1911
Townsend, C. J	1904
Townsend, D. T	1904
Traill, J. J	1905
Treadgold, W. M	1905
Trees, S. L	1903
Trees, A. G	1909
Tremaine, R. C. C. (deceased)	1895
Trimble, A. V	1904
Trow, R. M	1913
Tucker, B. B	1904
Turnbull, W. G	1909
Turner, W. E	1905
Tye, H. W	1908
Tyrrell, J. W	1883
Tyrrell, H. G	1886

U

Umbach, J. E	1903
Underwood, J. E	1909
Ure, W. G	1913
Uren, A. E	1905

V

Van Allen, K. M	1910
VanEvery, W. W	1899
VanNorman, C. P	1908–1909
VanNostrand, J	1909
Vatcher, A	1909
Vaughan, J. M	1905
Venney, L. T	1910
Vercoe, H. L	1898
Vickers, N	1911
Vickery, C. L	1906
Villeneuve, T. L	1908
Von Gunten, C. F	1913

W

Wade, E	1904
Wagner, N	1910
Wagner, W. E	1899
Wagner, H. L	1905
Waite, J. H. C	1911
Walcott, W. D	1911
Waldron, J	1903
Walker, E. W. (deceased)	1904

Walker, R. M	1910
Walker, W. J	1907
Walker, J. A	1908
Walker, C. M	1909
Wallace, G. L	1911
Walton, T. (deceased)	1910
Wanless, A. A	1902
Wardell, A	1911
Warrington, G. A	1910
Wass, S. B	1903
Watson, F. E	1911
Watson, M. B	1910
Watson, R. B	1893
Watson, J. P	1904
Watt, G. H	1899
Watts, R. E	1913
Waugh, B	1908
Webb, C. E	1909
Webb, E. E	1909
Webster, C. A	1913
Webster, H	1913
Wedlake, R. M	1908
Weeks, M. B	1897
Weir, D. H	1913
Weir, H. M	1900
Weir, J. M	1904
Weir, R. P	1908
Weldon, E. A	1897
Welford, P. G	1911
Wells, A. F	1904
West, A. M	1908
Wheler, A. G	1911
Whelihan, J. A	1903
White, A. V	1892
White, H. F	1903
White, W. R	1908
White, W. J	1908
White, F. C	1909
White, H. M	1910
Whitelaw, A. R	1909
Whitside, J. L	1910
Wickens, W. S	1910
Wickett, T	1889
Wickett, W. E. (deceased)	1906
Wiggins, T. H	1890
Wilkes, E. D	1907
Wilkes, G. H	1911
Wilkinson, T. A	1898
Wilkinson, R. G	1909
Williams, C. G	1903
Williams, E. R	1911
Williams, J. A. McK	1909
Williams, G. K	1910
Williamson, O. T. G	1909
Williamson, D. A	1898
Wilson, H. A	1911
Wilson, R. D	1901
Wilson, N. D	1903
Wilson, J. N	1906
Wilson, A. F	1907
Wilson, F. D	1908
Wilson, J. M	1908
Wilson, L. R	1909
Wilson, F. F	1909
Wilson, W. H	1910
Winters, W. S	1913
Wing, D. O	1908
Withrow, W. J	1890
Withrow, F. D	1900
Wood, E. M	1906
Wood, R. F. B	1913
Woodley, G. E	1910
Woods, M. H	1907
Wookey, S. A	1909
Worden, W. G	1911
Workman, G. R	1910
Worthington, W. R	1904
Wright, A. J	1913
Wright, C. H. C	1888
Wright, R. T	1894
Wright, W. F	1904
Wright, L. A	1910
Wright, G. W. A	1907
Wright, W. J. T	1911
Wrong, F. H	1911
Wylie, W. H	1911
Wyman, H. K	1911

Y

Yeates, E	1899
Yorke, L. P	1911
Youell, A. W	1910
Young, C. R	1903
Young, W. S	1910
Young, W. H	1905
Young, R	1908
Young, J	1907
Young, A	1911
Young, S	1911
Young, R. B	1913

Z

Zahn, H. J	1902
Zimmer, A. R	1907
Zinkan, W. E	1911

THE

CALENDAR

OF THE

University of Toronto

FACULTY OF
APPLIED SCIENCE AND ENGINEERING
1915-1916

UNIVERSITY PRESS
TORONTO

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1915 CALENDAR 1915

JANUARY

Sun.		3	10	17	24	31
Mon.		4	11	18	25	
Tues.		5	12	19	26	
Wed.		6	13	20	27	
Thur.		7	14	21	28	
Fri.	1	8	15	22	29	
Sat.	2	9	16	23	30	

FEBRUARY

Sun.		7	14	21	28	
Mon.	1	8	15	22		
Tues.	2	9	16	23		
Wed.	3	10	17	24		
Thurs.	4	11	18	25		
Fri.	5	12	19	26		
Sat.	6	13	20	27		

MARCH

Sun.		7	14	21	28	
Mon.	1	8	15	22	29	
Tues.	2	9	16	23	30	
Wed.	3	10	17	24	31	
Thur.	4	11	18	25		
Fri.	5	12	19	26		
Sat.	6	13	20	27		

APRIL

Sun.		4	11	18	25	
Mon.		5	12	19	26	
Tues.		6	13	20	27	
Wed.		7	14	21	28	
Thur.	1	8	15	22	29	
Fri.	2	9	16	23	30	
Sat.	3	10	17	24		

MAY

Sun.		2	9	16	23	30
Mon.		3	10	17	24	31
Tues.		4	11	18	25	
Wed.		5	12	19	26	
Thur.		6	13	20	27	
Fri.		7	14	21	28	
Sat.	1	8	15	22	29	

JUNE

Sun.		6	13	20	27	
Mon.		7	14	21	28	
Tues.	1	8	15	22	29	
Wed.	2	9	16	23	30	
Thur.	3	10	17	24		
Fri.	4	11	18	25		
Sat.	5	12	19	26		

JULY

Sun.		4	11	18	25	
Mon.		5	12	19	26	
Tues.		6	13	20	27	
Wed.		7	14	21	28	
Thur.	1	8	15	22	29	
Fri.	2	9	16	23	30	
Sat.	3	10	17	24	31	

AUGUST

Sun.	1	8	15	22	29	
Mon.	2	9	16	23	30	
Tues.	3	10	17	24	31	
Wed.	4	11	18	25		
Thur.	5	12	19	26		
Fri.	6	13	20	27		
Sat.	7	14	21	28		

SEPTEMBER

Sun.		5	12	19	26	
Mon.		6	13	20	27	
Tues.		7	14	21	28	
Wed.	1	8	15	22	29	
Thur.	2	9	16	23	30	
Fri.	3	10	17	24		
Sat.	4	11	18	25		

OCTOBER

Sun.		3	10	17	24	31
Mon.		4	11	18	25	
Tues.		5	12	19	26	
Wed.		6	13	20	27	
Thur.		7	14	21	28	
Fri.	1	8	15	22	29	
Sat.	2	9	16	23	30	

NOVEMBER

Sun.		7	14	21	28	
Mon.	1	8	15	22	29	
Tues.	2	9	16	23	30	
Wed.	3	10	17	24		
Thur.	4	11	18	25		
Fri.	5	12	19	26		
Sat.	6	13	20	27		

DECEMBER

Sun.		5	12	19	26	
Mon.		6	13	20	27	
Tues.		7	14	21	28	
Wed.	1	8	15	22	29	
Thur.	2	9	16	23	30	
Fri.	3	10	17	24	31	
Sat.	4	11	18	25		

1916 CALENDAR 1916

JANUARY

Sun.		2	9	16	23	30
Mon.		3	10	17	24	31
Tues.		4	11	18	25	
Wed.		5	12	19	26	
Thur.		6	13	20	27	
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Fri.	3	10	17	24		
Sat.	4	11	18	25		

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Thur.		7	14	21	28	
Fri.	1	8	15	22	29	
Sat.	2	9	16	23	30	

CALENDAR 1915-1916.

1915—Sept.	1	Applications for Registration received.
		Last day for receiving applications for Supplemental Examinations.
	17	Supplemental Examinations begin.
	24	Meeting of Faculty Council.
	28	Enrolment.
	28	First Term begins.
		Last day for receiving Vacation Work.
		President's address to students at 3 p.m.
Oct.	1	Meeting of Faculty Council.
	6	Meeting of Engineering Society.
	20	Meeting of Engineering Society.
Nov.	3	Meeting of Engineering Society.
	5	Meeting of Faculty Council.
	17	Meeting of Engineering Society.
Dec.	1	Meeting of Engineering Society.
	3	Meeting of Faculty Council.
	15	Meeting of Engineering Society.
	17	First Term ends at 12 noon.
1916—Jan.	4	Second Term begins.
		Last day for receiving Theses for B.A.Sc.
	7	Meeting of Faculty Council.
	12	Meeting of Engineering Society.
	26	Meeting of Engineering Society.
Feb.	4	Meeting of Faculty Council.
	9	Meeting of Engineering Society.
	23	Meeting of Engineering Society.
Mar.	4	Meeting of Faculty Council.
	9	Meeting of Engineering Society.
	11	Annual elections of Engineering Society.
	23	Annual Meeting of Engineering Society.
April	7	Meeting of Faculty Council.
	7	Lectures and practical work close.
	11	Annual Examinations begin.
	21	Good Friday—Building closed.
May	6	Meeting of Faculty Council.
June	9	Annual Commencement.

The buildings will be closed on all public holidays and daily at noon during July and August.

University of Toronto.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

President................R. A. Falconer, LL.D., D.Litt., C.M.G.
Dean of Faculty..............W. Hodgson Ellis, M.A., M.B.
Secretary of Faculty.........................A. T. Laing, B.A.Sc.
Bursar...................................F. A. Mouré, Esq.

G. R. Anderson, M.A., *Associate Professor of Physics.*	534 Palmerston Ave.
R. W. Angus, B.A.Sc., Mem. Am. Soc. M.E. *Professor of Mechanical Engineering.*	42 Howland Ave.
E. G. R. Ardagh, B.A.Sc., *Assistant Professor of Analytical Chemistry.*	Chem. & Mining Bldg.
J. W. Bain, B.A.Sc., *Associate Professor of Applied Chemistry.*	393 Brunswick Ave.
M. C. Boswell, M.A., Ph.D., *Assistant Professor of Organic Chemistry.*	100 Dewson St.
J. R. Cockburn, B.A.Sc., A.M. Can. Soc. C.E., *Assistant Professor of Descriptive Geometry.*	100 Walmer Rd.
S. R. Crerar, B.A.Sc., D.L.S., *Lecturer in Surveying.*	122 Grenadier Rd.
W. Hodgson Ellis, M.A., M.B., *Professor of Applied Chemistry.*	74 St. Alban St.
P. Gillespie, M.Sc., C.E., A.M. Can. Soc. C.E., *Associate Professor of Applied Mechanics.*	358 Davenport Rd.
G. A. Guess, M.A., *Professor of Metallurgy.*	Oakville.
H. E. T. Haultain, C.E., M.I.M.M., *Professor of Mining Engineering.*	63 Heath St.
A. T. Laing, B.A.Sc., *Assistant Professor of Applied Mechanics.*	146 Balmoral Ave.
T. R. Loudon, B.A.Sc., *Assistant Professor of Ferro-Metallurgy.*	107 Sheldrake Rd.
A. Wellesley McConnell, B.A.Sc., *Assistant Professor of Architecture.*	171 Spadina Rd.
J. McGowan, B.A., B.A.Sc., *Associate Professor of Applied Mechanics.*	Engineering Building.
H. W. Price, B.A.Sc., *Associate Professor of Electrical Engineering.*	474 Palmerston Ave.
T. R. Rosebrugh, M.A., *Professor of Electrical Engineering.*	92 Walmer Rd.
L. B. Stewart, O.L.S., D.T.S., *Professor of Surveying & Geodesy.*	161 Admiral Rd.

J. J. Traill, B.A.Sc., *Lecturer in Hydraulics.*	34 Wolfrey Ave.
W. M. Treadgold, B.A., *Assistant Professor of Surveying.*	13 Woodlawn Ave. E.
C. H. C. Wright, B.A.Sc., Mem. O.A.A., *Professor of Architecture.*	419 Markham St.
C. R. Young, B.A.Sc., C.E., M. Can. Soc. C.E., *Assistant Professor of Structural Engineering.*	98 Hilton Ave.

Sessional Appointments.

R. J. Allen, B.A.Sc., *Demonstrator in Electrical Engineering.*	325 Davenport Rd.
L. M. Arkley, M.Sc., M. Can. Soc. C.E., *Lecturer in Mechanical Engineering.*	61 Indian Rd. Crescent.
L. A. Badgley, B.A.Sc., *Demonstrator in Drawing.*	1055 Bathurst St.
E. W. Banting, B.A.Sc., *Lecturer in Surveying.*	330 St. George St.
H. Brownlee, B.A. (Kansas Univ.), *Demonstrator in Electrochemistry.*	47 Howland Ave.
W. B. Buchanan, B.A.Sc., *Demonstrator in Electrical Engineering.*	104 Charles St. W.
J. G. Burns, B.A., *Fellow in Chemistry.*	486 Jarvis St.
J. T. Burt-Gerrans, B.A., Phm.B., *Lecturer in Electrochemistry.*	46 Dewson St.
A. R. Duff, *Fellow in Chemistry.*	211 Fern Ave.
F. C. Dyer, B.A.Sc., *Lecturer in Mining Engineering.*	358 Conduit St.
W. S. Ferguson, C.A., *Lecturer in Accountancy.*	52 Tranby Ave.
J. S. Galbraith, B.A.Sc., *Demonstrator in Drawing.*	9 Rowanwood Ave.
C. W. Graham, B.A.Sc., *Fellow in Chemistry.*	54 Dingwall Ave.
W. S. Guest, B.A.Sc., *Lecturer in Electrical Engineering.*	30 McMaster Ave.
G. H. Hally, B.A.Sc., *Demonstrator in Mechanical Engineering.*	49 Pleasant Blvd.
R. H. Hopkins, B.A.Sc., *Lecturer in Electrical Engineering.*	85 St. George St.
J. T. Howard, B.A.Sc., *Demonstrator in Drawing.*	138 Madison Ave.

C. W. Jefferys, A.R.C.A., Mem. O.S.A., York Mills.
Instructor in Freehand Drawing and Water Colour.

J. T. King, B.A.Sc., 446 Indian Grove Ave.
Lecturer in Mining Engineering.

J. T. Lagergren, M.E., 148 Carlton St.
Lecturer in Machine Design.

F. E. Lathe, B.A., B.Sc., 22 Sussex Ave.
Lecturer in Metallurgical Engineering.

E. L. Laur, 324 Rusholme Rd.
Instructor in Modelling.

Miss J. C. Laing, B.A., 956 St. Clair Ave. W.
Instructor in French.

H. M. Lancaster, B.A.Sc., 22 Palmerston Gardens.
Lecturer in Sanitary Chemistry.

J. M. Langstaff, C.A., F.I.A., E.A.S., 604 Huron St.
Lecturer in Accountancy.

H. H. Madill, B.A.Sc., 23 Grange Rd.
Demonstrator in Architecture.

R. J. Marshall, B.A.Sc., 60 Rosemount Ave.
Demonstrator in Applied Mechanics.

W. H. Martin, B.A.Sc., 649 Euclid Ave.
Demonstrator in Drawing.

F. C. Mechin, Eng. Bldg.
Fellow in Drawing.

J. W. Melson, B.A.Sc., 368 George St.
Fellow in Surveying.

H. O. Merriman, B.A.Sc., 62 Tranby Ave.
Demonstrator in Electrical Engineering.

J. S. Mitchell, B.A.Sc., 602 Palmerston Ave.
Demonstrator in Applied Mechanics.

L. S. Odell, 22 Classic Ave.
Fellow in Drawing.

J. H. Parkin, B.A.Sc., 43 Brookmount Rd.
Lecturer in Mechanical Engineering.

J. T. Ransom, B.A.Sc., D.L.S., O.L.S., Parkdale Mansions.
Demonstrator in Surveying.

L. J. Rogers, B.A.Sc., 528 Brunswick Ave.
Demonstrator in Chemistry.

L. T. Rutledge, B.A.Sc., A.M., Can. Soc. C.E. 320 Concord Ave.
Demonstrator in Drawing.

F. R. Scandrett, B.A.Sc., 30 Grosvenor St.
Fellow in Surveying.

W. J. Smither, B.A.Sc., A.M. Can. Soc. C.E., 66 St. Albans St.
Demonstrator in Drawing.

A. L. Steele, B.A.Sc., 57 Charles St. W.
Demonstrator in Mining Engineering.

R. TAYLOR, B.A.Sc., 2 Indian Grove.
Demonstrator in Electrical Engineering.
D. J. THOMSON, B.A.Sc., 113 Gothic Ave.
Demonstrator in Mechanical Engineering.
G. L. WALLACE, B.A.Sc., 58 Parkway Ave.
Demonstrator in Physics.
F. E. WATSON, B.A.Sc., 447 Manning Ave.
Demonstrator in Drawing.
W. S. WICKENS, B.A.Sc., 109 Lytton Boulvd.
Fellow in Drawing.
G. K. WILLIAMS, B.A.Sc., 147 Gore Vale Ave.
Demonstrator in Drawing.
A. C. WILSON, B.A.Sc., 283 Evelyn Ave.
Fellow in Physics.
G. R. WORKMAN, 22 Helena Ave.
Fellow in Drawing.
W. J. T. WRIGHT, B.A.Sc., 419 Markham St.
Demonstrator in Drawing.
A. R. ZIMMER, B.A.Sc., 32 Delaware Ave.
Lecturer in Electrical Engineering.

MEMBERS OF OTHER FACULTIES GIVING INSTRUCTION TO STUDENTS IN APPLIED SCIENCE.

F. B. ALLAN, M.A., PH.D., 380 Brunswick Ave.
Associate Professor of Organic Chemistry.
J. A. AMYOT, M.B., 4 Laburnum Ave.
Professor of Hygiene.
ALFRED BAKER, M.A., 81 Madison Ave.
Professor of Mathematics.
B. A. BENSLEY, B.A., PH.D., 316 Brunswick Ave.
Associate Professor of Zoology.
J. H. CAMERON, M.A., 96 Admiral Rd.
Associate Professor of French.
C. A. CHANT, M.A., PH.D., 201 Madison Ave.
Associate Professor of Astro-Physics.
A. P. COLEMAN, M.A., PH.D., 476 Huron St.
Professor of Geology.
A. T. DELURY, M.A., University of Toronto.
Professor of Mathematics.
J. H. FAULL, B.A., PH.D., 102 Yorkville Ave
Associate Professor of Botany.
A. G. HUNTSMAN, B.A., M.B., 210 Fern Ave.
Lecturer in Biology.

W. J. Loudon, B.A., *Professor of Mechanics.*	133 Walmer Rd.
M. A. Mackenzie, M.A., F.I.A., *Professor of Mathematics.*	1 Bellwoods Park.
W. L. Miller, B.A., Ph.D., *Professor of Physical Chemistry.*	50 St. Alban St.
G. H. Needler, B.A., Ph.D., (Leipsic) *Professor of German.*	103 Bedford Rd.
W. A. Parks, B.A., Ph.D., *Associate Professor of Geology.*	69 Albany Ave
A. L. Parsons, B.A., *Assistant Professor of Mineralogy.*	22 Kendal Ave.
J. Squair, B.A., *Professor of French.*	368 Palmerston Blvd.
T. L. Walker, M.A., Ph.D., *Professor of Mineralogy and Petrography.*	62 Maple Ave.
E. M. Walker, B.A., M.B., *Lecturer in Zoology.*	67 Alcina Ave.

Sessional Appointments.

J. G. Beatty, B.A., *Fellow in Mathematics.*	12 Major St.
S. Beatty, M.A., *Lecturer in Mathematics.*	22 Alvin Ave.
H. V. Ellsworth, M.A., *Fellow in Mineralogy.*	73 Tranby Ave.
A. J. Foerster, B.A., *Fellow in Mathematics.*	242 Major St.
A. C. Hazen, B.A., *Fellow in Geology.*	
A. Maclean, B.A., *Lecturer in Geology.*	102 College St.
I. R. Pounder, B.A., *Lecturer in Mathematics.*	239 Carlton St.
J. E. Thomson, B.A.Sc., *Lecturer in Mineralogy.*	57 Queen's Park.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

Historical Sketch.

The Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practical Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February, 1877.

By the scheme thus approved of, Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1889 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By the terms of this order the management and discipline of the School was vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degrees in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal, the Professors and Lecturers, together with the Registrar.

By the University Act, 1906, the School of Practical Science was united to the University of Toronto as its Faculty of Applied Science and Engineering.

GRADUATING DEPARTMENTS.

There are eight regular Departments of Instruction leading to the degree of Bachelor of Applied Science:—

1. Civil Engineering.
2. Mining Engineering.
3. Mechanical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.
7. Electrical Engineering.
8. Metallurgical Engineering.

The instruction given in these departments extends over a period of four years and is designed to give the student a thorough knowledge of the scientific principles underlying the practice in the several professions, and also such training as may make him immediately useful when he commences professional work.

DEGREE OF MASTER OF APPLIED SCIENCE (M.A.Sc.).

(For requirements, see page 74.)

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem. E.), as the case may be, subject to the rules and regulations established by the University. (See page 74.)

FELLOWSHIPS.

Fellowships of the value of $500 each, open to graduates, are offered annually in the various departments.

Applications for these fellowships are to be made annually in writing to the Secretary of the Faculty on or before the 1st day of May.

SCHOLARSHIPS.

The Boiler Inspection and Insurance Company of Canada offers a Scholarship in the Department of Mechanical Engineering of the value of $130.00 to the student who obtains highest Honour Standing in the regular examinations of the third year.

The successful candidate will be expected to proceed to his fourth year during the session next following the date of the award.

The amount of the award will be credited by the Bursar to the fees of the fourth year of the successful candidate.

Research Fellowship.

Two research Fellowships of the value of $500 each are offered annually by the Alumni Association of the Faculty of Applied Science and Engineering.

I. MATRICULATION.

1. The matriculation requirements of this Faculty are based upon those given in the curriculum for Junior Matriculation, a copy of which may be obtained on application.

2. A candidate for matriculation must produce satisfactory certificates of good character.

3. The subjects are as follows:

English, History, any three of the following, viz., Greek, Latin, French, German, Experimental Science, with pass standing in Honour Mathematics.

In selecting the options it is recommended that students take French, German and Experimental Science. In the department of Architecture French is required, in Applied Chemistry and Chemical Engineering German is required, and in Mechanical Engineering it is desirable that students take German.

4. The pass standard is forty per cent. of the marks assigned to a paper, with an average of sixty per cent.

5. A candidate who has obtained an average of sixty per cent. on all the papers but has failed to obtain forty per cent. in not more than two papers may complete matriculation by passing on these papers at any one subsequent examination.

6. A candidate who has obtained forty per cent. on each of at least eight papers, with an average of sixty per cent. on the same, will be credited with these papers. In order to complete his Matriculation, he must obtain at one subsequent examination forty per cent. on each of the remaining papers, with an average of sixty per cent.

7. The examination for pass and honour Junior Matriculation is held annually in June at centres in Ontario, and, if application is made to the Senate, the examination may, with the co-operation of the Department of Education, be held at centres outside Ontario.

8. Applications accompanied by the fee of $5.00 must be sent not later than the 15th of May to the local Public School Inspector, or in the case of candidates intending to write at the University, to the Registrar.

9. A Junior Matriculation examination, at which no honour papers are set, will be held in September at the University and at such other centres as may from time to time be authorized. Candidates entitled to the privileges of supplemental examinations, as well as new candidates, may present themselves at this examination.

10. Applications to write on the September examination, together with the necessary fee, must be received at the Department of Education not

later than September 1, for those who wish to write at any centre established in Ontario, and not later than August 1 for any centre elsewhere in Canada.

11. Forms of application, the time-table of the September examination, and further particulars may be had upon application to the Department of Education.

II. ADMISSION.

A candidate for admission must have completed the seventeenth year of his age on or before the first of October of the year in which he seeks to enter.

Applications for admission must be made on blank forms supplied by the Registrar, and should be forwarded early in September.

Applications will be considered from (*a*) those who have completed matriculation, including those who hold certificates recognized as equivalent—see matriculation curriculum—, (*b*) those who have failed in not more than two papers of the matriculation examination. The latter must complete matriculation before being eligible to enter the second year.

Applications based upon other certificates than those mentioned will be considered as occasion may require. Such certificates must be accompanied by an official statement of the marks in the various subjects upon which the certificate was granted.

ADMISSION AD EUNDEM STATUM.

An undergraduate of another University may be admitted *ad eundem statum* on such conditions as the Senate on the recommendation of the Council of the Faculty may prescribe.

An applicant for admission *ad eundem statum* must submit with his petition (1) a calendar of his University giving a full statement of the courses of instruction; (2) an official certificate of character and academic standing.

III. REGISTRATION.

Registration in the various years will begin Sept. 1st Blank cards for the purpose will be supplied by the Secretary on request. (See "Dues and Deposits," next page.)

IV. FEES.

All fees are payable at the Bursar's office between the hours 10 a.m. and 1 p.m. of each week day except Saturday.

The annual fees including tuition, library, laboratory supplies and one annual examination shall be as follows:

First Year.

If paid in full on or before November 5th....................	$100.00
By instalments:	
First instalment, if paid on or before November 5th...........	50.00
Second instalment, if paid on or before February 5th........	55.00

Second Year.

If paid in full on or before November 5th	$110.00
By instalments:	
First instalment, if paid on or before November 5th	55.00
Second instalment, if paid on or before February 5th	60.00

Third and Fourth Years.

If paid in full on or before November 5th	$120.00
By instalments:	
First instalment, if paid on or before November 5th	60.00
Second instalment, if paid on or before February 5th	65.00

Repeating the Year.

If paid in full on or before November 5th	$50.00

The above fees are payable in advance. After November 5th a penalty of $1.00 per month will be imposed until the whole amount is paid. In the case of payment by instalments the same rule as to penalty will apply.

Students desiring to pay in instalments must have paid the fees due in the first term before proceeding to the work of the second term.

General Fees.

Matriculation, or registration of Matriculation	$5.00
Supplemental examination	10.00
Admission *ad eundem statum*	10.00
Degree of B.A.Sc. (payable not later than April 1st)	10.00
Degree of M.A.Sc.	25.00

Dues and Deposits.

(Payable to the Secretary of the Faculty at the time of registration.)

Engineering Society membership	$2.00
Annual deposit	2.00

Charges for waste, neglect and breakage are to be met out of the deposit fee, the balance of which will be refunded to the student at the end of the session.

Students' Council Fee.

The Annual Fee	$1.00

Every male student in attendance, proceeding to the Degree of Bachelor of Applied Science and Engineering, is required to pay to the Bursar, at the time of the entry of his name with the Secretary, the Annual Fee of one dollar, for the maintenance of the Council of the Undergraduates.

GENERAL INFORMATION FOR STUDENTS.

The Council of University College and the governing bodies of the federated universities and colleges, respectively, have disciplinary jurisdiction over and entire responsibility for the conduct of their students in respect of all matters arising or occurring in or upon their respective college buildings and grounds, including residences.

The councils of such of the faculties as have assigned for their separate use any building or buildings and grounds, including residences, have disciplinary jurisdiction over and entire responsibility for the conduct of all students in their respective faculties in respect of all matters arising or occurring in or upon such building, or buildings and grounds.

In all such cases, and, save as aforesaid, as respects all students to whatsoever college or faculty they may belong, disciplinary jurisdiction is vested in the Caput, but the Caput may delegate its authority in any particular case or by any general regulation to the council or other governing body of the university or college or faculty to which the student belongs.

The Caput has also power and authority to determine by general regulations, or otherwise, to what college, faculty or other body the control of university associations belongs.

If there be any questions as to the proper body to exercise jurisdiction in any matter of discipline which may arise, the same shall be determined by the Caput, whose decision shall be final.

Disciplinary jurisdiction includes the power to impose fines.

REGULATIONS RESPECTING STUDENTS.

No student will be enrolled in any year, or be allowed to continue in attendance, whose presence for any cause is deemed by the Council to be prejudicial to the interests of the University.

All interference on the part of any student with the personal liberty of another, by arresting him, or summoning him to appear before any tribunal of students, or otherwise subjecting him to any indignity or personal violence, is forbidden by the Council. In particular, students of all Faculties are warned against the practices known as the "hustling" of freshmen and against inter-year or inter-faculty "hustles". Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

Any student who may be convicted of having taken part in processions through the city, which have not been authorized by the police authorities after application by the Executive of the Students' Council, will be severely disciplined.

All students shall be in attendance during the whole of each term. Those whose attendance or work is reported as unsatisfactory are liable to dismissal by the Council.

No student will be allowed to repeat the work of any year more than once.

Information as to the text-books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

OPTIONS.

In departments 1, 2, 3 and 7 of the first and second years, students have the option of taking either French or German. The selection made for the first year must be continued during the second year.

In department 5, second year, an option is permitted between Biology and Calculus as the student, upon consultation with the head of the department in Chemistry, may decide.

In the fourth year, optional courses are arranged in certain departments. Students are required to submit their selection to the Secretary in writing, not later than September 15th. The proposed selection must be approved by Council before adoption.

REGULATIONS RESPECTING EXAMINATIONS.

Regular Examinations.

A student who in either term of the session fails to perform the work of his course in a manner satisfactory to the professors in charge, will not be allowed to present himself at the final examinations of the year.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the annual examinations in April, notice in writing of their intention to take such examinations. A penalty of $1.00 will be imposed upon all candidates who fail to give notice within the proper time.

In the second, third and fourth years annual examinations will be held at the beginning of the second term on all subjects completed during the first term.

No student will be allowed to write at the annual examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examination will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and one-half times the minimum required in the case of a written examination.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, electrical design, optics, surveying and architecture, the drawings set in these subjects must be made.

Candidates who fail in passing the annual examinations will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

Term Examinations.

Inthe first year only, term examinations in three subjects will be held on the last two days of the first term.

The subjects will not be announced until the day previous to the first examination.

The results of these examinations will be incorporated with those of the nnual examinations in the same subjects in the ratio of 1 to 2.

Supplemental Examinations.

A candidate who fails in one or two subjects at the Annual Examinations will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 17th of September, 1915. Candidates are required to send to the Secretary of the Faculty not later than the first of September, notice in writing of their intention to take such examinations, and to remit to the Bursar the fee of $10.00. A penalty of $1.00 will be imposed upon all candidates who fail to give notice within the time stated.

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

Vacation Work.

Vacation work must be handed in on or before the first day of the session.

Vacation notes must be on construction only, except in Department 2 (see p. 74), and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be freehand pencil drawings with figured dimensions.

Notes must be made in standard note books approved of by the Faculty, Notes which have been taken during the session in connection with the work in drawing will not count as vacation work.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

Shop Work.

Students in Mechanical and Electrical Engineering are not considered as having completed their course of study, nor are degrees granted until certificates have been submitted to the Council, and accepted as satisfactury, showing not less than eight months of mechanical experience in production of some kind under commercial conditions. Preferably the work undertaken should be in one of the manufacturing industries or trades with which the Course is related.

It is not desirable that any student in these Courses should enter sales or other non-production departments of the engineering industries without having acquired some personal experience in mechanical production. It is best to obtain this experience under commercial conditions. Otherwise one can not at all appreciate shop conditions and limitations.

Honours.

Honours will be granted in each department to the students who obtain at least 40 per cent. in each subject, and 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Honour Graduate standing will be granted to those who obtain honours in the final and in one previous year.

REGULATIONS RESPECTING TERM WORK.

Students working in any laboratory must be governed by the regulations relating thereto as made known from time to time.

No laboratory reports or drawings may be removed from the laboratories without permission. The Council reserves the right to dispose of them as may be thought proper.

Field Work.

No field notes will be counted which have not been taken in the field and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

Drafting Rooms.

Drawings prescribed for the first term of the session will not be counted unless finished in that term.

The minimum number of drawings in first and second years shall be twenty-five, and the maximum number thirty-five, except in the Department of Analytical and Applied Chemistry, in which the number shall be fifteen and twenty-five respectively.

No drawings will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

Theses.

In the Fourth Year each student is required to prepare a thesis on a subject approved by the Council. The title of the thesis must be sent to the Secretary of the Faculty for approval on or before November 1st, and the completed thesis must be handed in not later than the first day of the second term and shall become the property of the University. The rules governing size, form, etc., may be obtained on application to the Secretary.

EXEMPTIONS.

Applications for exemption from any of the regulations must be made to the Council in writing and the particulars of the case fully stated.

DEPARTMENT OF CIVIL ENGINEERING.

The courses of study in Civil Engineering are designed to give the student a sound training in the fundamental scientific principles on which the practice of the profession is based. The instruction is given by means of lectures and practical work in the field, the drafting room and the laboratory. In this way the student is led to apply the principles developed in the class room.

SUBJECTS OF INSTRUCTION.

Civil Engineering—First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		2	
Descriptive Geometry	115	1		1	
Surveying	205, 206	1	9	1	
Statics	10	2		2	
Dynamics	11	2		2	
Elementary Chemistry	75	2		2	
Modern Language	217, 218	1		1	
Accounts	65	1		1	
Drawing	117		13		22
	Second Year.				
Vacation Work	220				
Calculus	190	2		2	
Spherical Trigonometry	191	1			
Elementary Astronomy	55	1		1	
Descriptive Geometry	121	1		1	
Surveying	207, 208	1	9	1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Mineralogy	159, 161	2	1		2
Banking and Finance	66	1		1	
Modern Language	217, 218	1		1	
Drawing	123		12		16
Chemical Laboratory	81				6

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term.	
		Lect.	Lab'y.	Lect.	Lab'y
Vacation Work	220				
Least Squares	192			1	
Practical Astronomy and Geodesy	56, 57	2		2	
Surveying and Levelling	209, 210	1	9	1	
Descriptive Geometry	127	1			
Hydraulics	29, 30	2		2	3
Photography	199	1	1½		1½
Ferro-Metallurgy	181	1		1	
Theory of Structures	18	2		2	
Cements and Concrete	21			1	
Engineering Chemistry	94	1		1	
Geology	150	1		1	
Limited Companies	67	1		1	
Heat	198	1	1½		
Strength of Materials	14				2
Drawing	128		8		19

Fourth Year.

†Foundations	20	1	1	1	1
Electricity	140	1		1	
†Thermodynamics	34, 39*a*	1		1	2
Economic Geology	151	1		1	
Contracts and Specifications	68			1	
Thesis	219				
And one of					
(*a*) Astronomy	58, 59	2	23	2	
(*a*) Geodesy	60	2		2	23
(*b*) Sanitary Engineering	213	1½	16	1½	16
(*b*) Highway Engineering	214	1	6	1	6
(*c*) Structural Engineering	215	6	22	7	22
(*d*) Strength of Materials with either :	16, 17, 22, 23	3½	11	3½	11
(1) Hydraulics	31, 31*a*, 32	3	10	3	10
or					
(2) Railway Engineering	211, 212	2	11	2	11

† Not required of those taking the Astronomy option.

2. DEPARTMENT OF MINING ENGINEERING.

The course in Mining Engineering is intended to serve as a preliminary training for those who expect to practise the art of mining or metallurgy. In the first two years it differs very little from the course in civil engineering, in the third year some subjects peculiar to mining and metallurgy are taken up.

In general this course is designed to first give the student a good training in the parts of engineering essential to all branches, such as surveying, drafting, etc., and then in the upper years to allow him to follow studies peculiar to mining engineering.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least six months' practical experience in work connected with mining, metallurgy or geology, for which they must have received regular wages. Certificate forms, giving full details as to acceptable classes of work, will be furnished on application, and should be obtained by all students before entering employment.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		2	
Descriptive Geometry	115	1		1	
Surveying	205, 206	1	9	1	
Statics	10	2		2	
Dynamics	11	2		2	
Elementary Chemistry	75	2		2	
Modern Languages	217, 218	1		1	
Accounts	65	1		1	
Drawing	117		13		19
Chemical Laboratory	76				3

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Surveying	207, 208	1	9	1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Inorganic Chemistry	79	1			
Organic Chemistry	87	1			
Engineering Chemistry	85			1	
Mineralogy	157, 160	2	1		3
Geology	150	1		1	
Mining	170, 171	1	3		
Metallurgy	183			1	
Modern Languages	217, 218	1		1	
Banking and Finance	66	1		1	
Drawing	123		7		7
Chemical Laboratory	81, 82				12

Mining Engineering—Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work............	220				
Surveying and Levelling.....	209, 210	1	9		
Theory of Structures.......	19	2			
Hydraulics...............	*29a*	2		2	
Electricity................	140	1		1	
Engineering Chemistry.....	94	1		1	
Analytical Chemistry......	80	1		1	
Assaying.................	173	1	3		3
Petrography..............	163	1		1	
Mineralogy...............	164		2		2
Economic Geology.........	151, 156	1		2	2
Ore Deposits.............	155	1		1	
Mining...................	172			2	3
Ore Dressing.............	177	1		1	
Ferro-Metallurgy..........	181	1		1	
Metallurgy...............	184	1		1	
Limited Companies........	67	1		1	
Drawing..................	132		9		2
Chemical Laboratory......	93				11

Fourth Year.

Thermodynamics..........	34	1		1	
Electrochemistry..........	101	2			
Assaying.................	174			1	3
Petrography..............	165, 166	1	2	1	2
Geology, Archaean and Glacial.................	152	2	1	2	
Geology, Mining..........	153	1		1	
Mining...................	175	1		1	
Ore Dressing.............	179	1		1	
Metallurgy...............	180, 182	1		1	6
Cost-keeping, etc..........	70	1		1	
Milling..................	176				6
Power..................	*32a*, *39a*, 141		3		3
Design..................	215		3		3
Chemical Laboratory......	112		12		
Thesis..................	219		7		2

3. DEPARTMENT OF MECHANICAL ENGINEERING.

The course in this Department is designed to meet the needs of those students who are intending to take up the work connected with Mechanical Engineering, such as the design of gas engines, steam engines, steam boilers, steam turbines, air compressors, etc.; the design and installation of the machinery connected with power plants and central stations, steam piping and other similar problems. The work is also so arranged that the student becomes somewhat familiar with the design of travelling cranes and mill buildings and similar problems connected with structural steel work.

Since the work of the mechanical engineer and of the electrical engineer is closely allied, the courses in these two departments in the first two years are identical and cover the subjects mentioned below.

In the third year the work becomes more specialized, the mechanical engineers paying more attention to heat engines of various types, and to mill building design and other work of similar nature. The study of electricity is continued and the student gets considerable practice in the mechanical and electrical laboratories.

In the fourth year the student devotes himself still more closely to his chosen work, placing the greater stress on thermodynamics and the theory and testing of heat engines, and problems in machine design. Much time is spent in the mechanical laboratories testing gas and steam engines and other machines.

Before receiving the degree in this department candidates are required to present satisfactory evidence of having had at least eight months' practical experience in one of the principal trades connected with Mechanical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering, as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSTRUCTION.

Mechanical Engineering—First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		2	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Magnetism and Electricity	135	2			
Electric Circuits	136			2	
Elementary Chemistry	75	2		2	
Drawing	120		20		20
Electricity	137		1½		1½
Modern Language	217, 218	1		1	
Accounts	65	1		1	

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Dynamics	12	1		1	
Theory of Mechanism	25	2		2	
Steam Engines	38	1			
Strength of Materials	13	2		2	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Electricity	138, 139	2	2½	2	2½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Banking and Finance	66	1		1	
Modern Language	217, 218	1		1	
Drawing	123		12		19
Chemical Laboratory	81		6		
Machine Details	28*a*			1	

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work............	220				
Mechanics of Machinery...	26	1		1	
Machine Design...........	27	1	7½	1	7½
Thermodynamics..........	33, 35	2	2	2	3
Heat Engines.............	39	1		1	
Hydraulics...............	29, 30	2		2	1
Theory of Structures.......	19	2			
Ferro-Metallurgy..........	181	1		1	
Magnetism and Electricity.	144, 142	2	4½	2	4½
Alternating Current.......	143	1		1	
Engineering Chemistry.....	94	1		1	
Limited Companies........	67	1		1	
Strength of Materials......	14		2		
Drawing.................	132		9		

Fourth Year.

Mill Building Design.......		1	3	1	3
Cost-keeping, etc..........		1		1	
Machine Design...........		1	4	1	4
Thesis..................	219				
And two of					
(*d*) Hydraulics..........	31, 31*a*, 32	3	9	3	9
(*e*) Strength of Materials	16, 17, 22, 23	3½	10	3½	10
(*g*) Thermodynamics....	36, 36*a*, 37	3	10	3	10

4. DEPARTMENT OF ARCHITECTURE

The instruction in this department is arranged to lay a broad foundation for the subsequent professional life of its graduates, and incidentally to prepare its students to be immediately useful in an architect's office. The curriculum has been arranged to meet the aesthetic and scientific needs of the profession, and includes History and Principles of Architecture, Freehand Drawing in pencil, ink and color, Modelling, Architectural Design, Analysis and Criticism of Buildings, Mathematics, Statics, Strength and Elasticity of Materials, Theory of Construction and Heating and Ventilation.

The equipment of the department includes a working library of 1,000 volumes, a large file of periodicals, 2,500 photographs, 2,000 stereographic photos, 4,500 lantern slides, and a large collection of models and casts.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	1		1	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		2	
Descriptive Geometry	116	1		1	
Building Measurement	52	1	9	1	
Statics	10	2		2	
Elementary Chemistry	75	2		2	
History and Principles of Architecture	40	1		1	
French	217	1		1	
Accounts	65	1		1	
Drawing	118		12		21
Freehand Drawing	49		2		2
Modelling	50		2		2

Second Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	122	1		1	
Strength of Materials	13	2		2	
Engineering Chemistry	94	1		1	

Second Year—Continued.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Optics	197	1	1½		
Hydrostatics	196			1	1½
Architectural Design	46	1		1	
History of Architecture	41	1		1	
Orders of Architecture	45	1		1	
History of Ornament	43	1		1	
French	217	1		1	
Banking and Finance	66	1		1	
Drawing Architectural Design	125		20		20
Freehand Drawing	49*a*		2		2
Modelling	50*a*		2		2

Third Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Vacation Work	220				
Descriptive Geometry	131				
Acoustics	195	1	1½	1½	
History of Architecture	42	1		1	
History and Principles of Ornament	44	1		1	
Architectural Design	47	1		1	
Building Materials	53	2		2	
Theory of Structures	19	2			
Cements and Concrete	21			1	
Limited Companies	67	1		1	
Strength of Materials	14				2
Photography	199	1	1½		1½
Modelling	50*b*		2		2
Water Color Painting	49*b*		2		2
Drawing	130		9		
Architectural Design			7		22

Fourth Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Strength of Materials	22	1		1	6
Electricity	140	1		1	
Heating and Ventilating	54*a*	1		1	
Sanitary Science	54	1		1	
Contracts and Specifications	68			1	
Thesis	219		3		3
Drawing from life	49*c*		2		2
Modelling from life	50*c*		2		2
And one of					
(*l*) Architectural Design	48	2	20	2	20
(*m*) Architectural Engineering	216	4	22	3	26

5. DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY.

The course in Analytical and Applied Chemistry is designed to furnish instruction suitable for those students who intend to practise chemistry as a profession, either as analysts or as works chemists.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		2	
Electricity and Magnetism	135	1		1	
Biology	61, 62	2		2	6
Accounts	65	1		1	
Electric Circuits	136	1		1	
Elementary Chemistry	75	2		2	
Elementary Mineralogy	157	2			
Inorganic Chemistry	77			1	
German	218	1		1	
Drawing	119		4		4
Electrical Laboratory	137	1½	1	1½	
Chemical Laboratory	78		10		14
Mineralogical Laboratory	158		4		3

Second Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Electricity	138, 139	2	2½		2½
Engineering Chemistry	85			1	
Industrial Chemistry	86	1		1	
Organic Chemistry	88	2		2	
Physical Chemistry	90	2		2	
Inorganic Chemistry	79	1			
Analytical Chemistry	80	1		1	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Geology	150	1		1	
*Biology or	63				3
Calculus	190	2		2	
German	218	1		1	
Banking and Finance	66	1		1	
Chemical Laboratory	89		15		16
Metallurgy	183			1	
Mineralogical Laboratory	162				1

* Students should consult the head of the Department of Chemistry as to the option to be selected.

Third Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Electrochemistry	101, 102	2	3		
Engineering Chemistry	94	1		1	
Industrial Chemistry	95	1		1	
Organic Chemistry A	97	2		2	
Organic Chemistry B	98			1	
Chemical Plant	96	1		1	
Ferro-Metallurgy	181	1		1	
Metallurgy	184	1		1	
Economic Geology	151	2		2	
Crystallography	167	1		1	
Limited Companies	67	1		1	
German	218	1		1	
Chemical Laboratory	91		16		20
Assaying	173		1½		1½
Heat	198	1	1½		
Electricity	140			1	

Fourth Year.

Inorganic Chemistry	103	1		1	
Organic Chemistry	104	1		1	
Cost-keeping, etc.	69	1		1	
German	218	1		1	
Thesis	219				
And one of					
(*h*) Electrochemistry	108, 109	2	28	2	28
(*i*) Industrial Chemistry	106, 107	1	29	1	29
(*j*) Sanitary and Forensic Chemistry and Bacteriology	64, 110, 111	1	29	2	29
(*k*) Metallurgy	180	1	28	1	28

6. DEPARTMENT OF CHEMICAL ENGINEERING.

In many industries there is a demand for a man who combines the technical knowledge of the mechanical engineer with a knowledge of chemistry. It is to fill this want that the course in Chemical Engineering is designed.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		2	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Magnetism and Electricity	135				
Electric Circuits	136			2	
Elementary Chemistry	75	2		2	
Inorganic Chemistry	77			1	
German	218	1		1	
Accounts	5	1		1	
Drawing	120		17		19
Electrical Laboratory	137		1½		1½
Chemical Laboratory	76				3

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Strength of Materials	13	2		2	
Electricity	138, 139	2	2½	2	2½
Engineering Chemistry	85			1	
Industrial Chemistry	86	1		1	
Organic Chemistry	88	2		2	
Physical Chemistry	90	2		2	
Inorganic Chemistry	79	1			
Optics	197	1	1½		
Hydrostatics	1 6			1	1½
German	218	1		1	
Banking and Finance	66	1		1	
Drawing	123		13		14
Chemical Laboratory	84		6		6
Metallurgy	183			1	
Machine Details	28*a*			1	

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Theory of Structures	19	2			
Thermodynamics	33, 35	2	2	2	1½
Electrochemistry	101, 102	2	3		
Engineering Chemistry	94	1		1	
Organic Chemistry A	97	2		2	
Organic Chemistry B	98			1	
Industrial Chemistry	95	1		1	
Analytical Chemistry	80	1		1	
Metallurgy	184	1		1	
Ferro-Metallurgy	181	1		1	
Chemical Plant	96	1		1	
Limited Companies	67	1		1	
German	218	1		1	
Machine Design	27	1	4½	1	4½
Assaying	173		1½		1½
Electricity	140			1	
Drawing	132		4		
Chemical Laboratory	92		9		13

Fourth Year.

Hydraulics	*29a*	2		2	
Inorganic Chemistry	103	1		2	
Organic Chemistry	104	1		1	
Cost-keeping, etc	69	1		1	
Power	*32a*, 141		2		2
German	218	1		1	
Thesis	219				
And one of					
(*h*) Electrochemistry	108	2	28	2	28
( ) Industrial Chemistry	106, 107	1	29	1	29
(*j*) Sanitary and Forensic Chemistry and Bacteriology	64, 110, 112	1	29	2	29
(*k*) Metallurgy	180	1	25	1	23

7. DEPARTMENT OF ELECTRICAL ENGINEERING.

The course in Electrical Engineering is arranged to provide preliminary training for those who would follow any of the various lines of activity connected with electrical industry.

The first two years of the course are devoted to fundamental scientific principles, and incidentally more or less of their application to engineering problems in mechanical, civil and electrical work. Many problems are solved in the drafting rooms by graphical methods. The third year includes further theoretical work, more particular attention being given to electrical and mechanical studies in theory, operation and design. The fourth year is devoted to advanced work in alternating current theory and practice combined with similar study in thermodynamics, hydraulics or electrochemistry.

A large amount of laboratory practice is provided most of which belongs to the third and fourth years. In this last year most of the time is spent in laboratory investigations and studies resulting therefrom.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' mechanical experience in one of the principal trades connected with Electrical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		2	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Magnetism and Electricity	135	2			
Electric Circuits	136			2	
Elementary Chemistry	75	2		2	
Modern Language	217, 218	1		1	
Accounts	65	1		1	
Drawing	120		20		20
Electricity	137		1½		1½

Second Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Optics	197	1	1½		
Hydrostatics	196			1	1½
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Theory of Mechanism	25	2		2	
Steam Engines	38	1			
Electricity	138, 139	2	2½	2	2½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Modern Language	217, 218	1		1	
Banking and Finance	66	1		1	
Drawing	124		12		19
Chemical Laboratory	81		6		
Machine Details	28*a*			1	
Third Year.					
Vacation Work	220				
Mechanics of Machinery	26	1		1	
Machine Design	27	1	3¼	1	3¼
Hydraulics	29, 30	2		2	1
Thermodynamics	33, 35	2	2	2	1½
Heat Engines	39	1		1	
Electrochemistry	101, 102	2	3		
Magnetism and Electricity	142	2		2	
Alternating Current	143	1		1	
Electrical Design	145	1	1½	1	3
Electrical Laboratory	144		6		6
Engineering Chemistry	94	1		1	
Ferro-Metallurgy	181	1		1	
Limited Companies	67	1		1	
Fourth Year.					
Applied Electricity	146, 147	3	18	3	18
Cost-keeping, etc	69	1		1	
Thesis	219				
And one of					
(*d*) Hydraulics	31, 31*a*, 32	3	10	3	10
(*g*) Thermodynamics	36, 36*a*, 37	3	10	3	10
(*h*) Electrochemistry	108, 109	2	10	2	10

8. DEPARTMENT OF METALLURGICAL ENGINEERING.

The object of this course is to provide instruction and preliminary training for those who intend to become metallurgical engineers. Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' experience in metallurgical work.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		2	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Chemistry	75, 77	2		3	
Chemical Laboratory	78		9		9
Accounts	65	1		1	
Mineralogy	157, 168	2	1		1½
Drawing	120		10		10

Second Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Hydrostatics	196			1	1½
Electricity	140			1	
Steam Engines	38	1			
Magnetism and Electricity	135	2			
Chemistry	79, 80, 85	2		2	
Physical Chemistry	90	2		2	
Banking and Finance	66	1		1	
Chemical Laboratory	93		11		9
Mineralogy	169		1		1
Mining	170, 171	1	3	1	
Metallurgy	183, 185	1		2	2
Spanish		1		1	
Drawing			7		7

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Theory of Mechanism	25	2		2	
Hydraulics	29*a*	2		2	
Theory of Structures	19	2			
Limited Companies	67	1		1	
Chemical Laboratory	93		5		5
Electrochemistry	101, 102	2	3		
Ferro-Metallurgy	181	1		1	
Cement and Concrete	21			1	
Assaying	173	1	3		3
Metallurgy	186	1	1	4	7
Mining	172			2	3
Ore Dressing	177	1		1	
Heat	198	1	1½		
Drawing			4		

Fourth Year.

Subject	No.	First Term Lect.	First Term Lab'y.	Second Term Lect.	Second Term Lab'y.
Thermodynamics	34	1		1	
Heat Engines	39	1		1	
Ore Dressing		2	2	2	4
Assaying	174			1	3
Cost-Keeping	70	1		1	
Plant Design		1	4	1	4
Power	32*a*, 39*a*, 141		3		3
Metallurgy	186*a*	2	9	2	9
Thesis			4		4

OUTLINE OF COURSES OF INSTRUCTION.

APPLIED MECHANICS.

10. STATICS:—*T. R. Loudon.*

Departments 1, 2, 3, 4, 6, 7 and 8, I Year; 2 hours per week; both terms.

This course of lectures deals with forces in a single plane, and concerns chiefly the calculation of tension, compression and shearing stresses in frame structures and solid beams. It also deals with the consideration of problems relating to friction.

11. DYNAMICS:—*J. McGowan.*

Departments 1, 2, 3, 6, 7 and 8, I Year; 2 hours per week; both terms.

This course of lectures deals with bodies having motion of translation in one plane; also with relative motion, momentum, work and energy.

Text book:—Tutorial Dynamics—Briggs and Bryan.

12. DYNAMICS OF ROTATION:—*W. J. Loudon.*

Departments 1, 2, 3, 7 and 8, II Year ; 1 hour per week; both terms.

This course covers angular motion, including moments of inertia, simple harmonic motion, the pendulum, centres of mass, suspension and percussion, the simple theory of the fly-wheel and the governor.

Text book:—Dynamics of Rotation—Worthington.

13. STRENGTH OF MATERIALS:—*P. Gillespie.*

Departments 1, 2, 3, 4, 6, 7 and 8, II Year; 2 hours per week; both terms.

In this course the strength and elasticity of materials are mathematically treated. The stresses in such elements of structures as the tie rod, the beam, the strut and the member subjected to shear are investigated and the elementary principles of design established. In the lecture and drafting rooms through numerous problems involving the design of simple beams, columns, riveted connections, etc., these principles are exemplified. The work includes also the discussion of eccentric loading, suddenly applied loads and repeated stresses.

Reference Book:—Mechanics of Materials—Merriman.

14. STRENGTH AND ELASTICITY OF MATERIALS:—*J. McGowan.*

Departments 1, 3 and 4, III Year; 2 hours per week; one term.

This course is intended to give the student an introduction to the experimental study of the strength and elasticity of materials. It is intended that he shall acquire some familiarity with the construction and operation of testing machines and with the properties of the ordinary building materials.

Reference Book:—Laboratory Instructions, Department of Applied Mechanics, U. of T., 1913.

16. THEORY OF STRUCTURES:—*J. McGowan.*

Departments 1 and 3, IV Year; 2 hours per week; both terms.

The work taken up in this course of lectures consists in swing bridges, arches, suspension bridges and some special features in column construction.

Reference Books:—Modern Framed Structures—Johnson. Typical Steel Railway Bridges—Thomson.

17. STRENGTH AND ELASTICITY OF MATERIALS:—*P. Gillespie.*

Departments 1, 3 and 4, IV Year; a laboratory course of about 11 hours per week.

This course of experiments is intended to give the student practice in investigating the elastic and physical properties of iron, steel, concrete, timber and other building materials.

Reference book:—Materials of Construction—Johnson.

18. THEORY OF STRUCTURES:—*C. R. Young.*

Department 1, III Year; 2 hours per week; both terms.

The work of the first term comprises a thorough discussion of restrained, continuous and trussed beams, multiple beam and box girders, plate girders and certain practical aspects of column design. A number of designs of girders and structural details are worked out in the class and drafting rooms.

The second term is given chiefly to the design of a riveted truss highway span and a riveted truss railway span, the complete designs being made in the lecture and drafting rooms.

19. THEORY OF STRUCTURES:—*C. R. Young.*

Departments 2, 3, 4, 6 and 8, III Year; 2 hours per week; first term.

The work is practically the same as that for Department 1 in the first term.

Text books:—Modern Framed Structures—Johnson, Bryan and Turneaure; Theory of Structures—Spofford; Bridge and Structural Design—Thomson; Aids in Structural Design—Young; Carnegie Pocket Companion; Cambria Steel.

20. FOUNDATIONS, RETAINING WALLS AND DAMS:—*P. Gillespie.*

Department 1, IV Year; 1 hour per week; both terms.

This course of lectures is devoted to the design of the structures mentioned. Preparatory to the discussion of the practical aspects of the subjects, and in order to gain familiarity with the fundamental principles involved, a part of the first term is given over to the consideration of the theory of compound stress. The most approved forms of construction of retaining walls, footings, abutments, piers and dams are then described, and typical designs are worked out in the class and drafting rooms.

Text books and books of reference:—Retaining Walls for Earth—M. A. Howe; Walls, Bins and Grain Elevators—M. S. Ketchum; A Treatise on Masonry Construction—I. O. Baker; Design and Construction of Dams—E. Wegmann.

21. CEMENTS AND CONCRETE:—*P. Gillespie.*

Departments 1, 4 and 8, III Year; 1 hour per week; second term.

The manufacture, testing and use of Portland cement and the fundamentals of the theory of reinforced concrete are discussed in this course of lectures.

22. REINFORCED CONCRETE:—*P. Gillespie.*

Departments 1, 3 and 4, IV Year; 1 hour per week.

The theory of the strength of reinforced concrete elements including the beam, the slab, the T-beam and the column, is continued in this course.

The analysis of the monolithic arch by the elastic theory is discussed, and the student is required in the drafting room to apply his knowledge to the design of simple structures.

Reference books:—Principles of Reinforced Concrete Construction—Turneaure and Maurer; Concrete, Plain and Reinforced—Taylor and Thompson.

23. IRON AND STEEL:—*T. R. Loudon.*

Taken by students in IV Year, who select the options (*c*) Structural Engineering, and (*e*) Strength and Elasticity of Materials.

Metallography—Mechanical Treatment, Heat Treatment; Metallurgy; Physical Properties; 1 lecture per week. Laboratory, second term.

24. MILL BUILDING DESIGN:—*C. R. Young.*

Departments 1 (*Structural Engineering Option*), 3 and 4 (*Architectural Engineering Option*), IV Year; 1 hour per week; both terms.

The structural problems involved in the design of mill buildings of timber, steel and reinforced concrete are discussed in this course of lectures. Consideration is given to the various types of buildings, the conditions governing their choice and the details of construction in different materials. Designs of portions of mill buildings are worked out in the class and drafting rooms.

Text books:—Mill Buildings—Tyrrell; Steel Mill Buildings—Ketchum.

24*a*. MISCELLANEOUS STRUCTURES:—*C. R. Young.*

Department 1 (*Structural Engineering Option* and *Sanitary and Highway Engineering Option*), IV Year; 1 hour per week, second term.

In this course of lectures the application of theoretical principles to the design of a variety of structures is made. Among those structures discussed are transmission line towers, elevated tanks and their supporting towers, standpipes, large pressure pipes, sewers, culverts, small highway bridges, sub-surface tanks and tall chimneys. Whenever possible the lecture work is followed up by designs in the drafting rooms.

MACHINERY.

25. THEORY OF MECHANISM:—*J. H. Parkin.*

Departments 3 and 7, II Year; Department 8, III Year; 2 hours per week; both terms.

This course of lectures treats of the motions of machines, the latter being assumed to be of sufficient strength to resist acting forces. The formation of machines is dealt with in a general way and investigations of the velocities of points and links are made. The design of gear teeth and the application of trains of gears are taken up, also problems in static equilibrium.

Problems are worked out in the drafting room in which the methods given are employed.

Text book:—Theory of Machines—Angus.

26. MECHANICS OF MACHINERY:—*J. H. Parkin.*

Departments 3 and 7, III Year; 1 hour per week; both terms.

In this course the questions dealt with are the construction of acceleration diagrams, the determination of the accelerations of various parts of machines, the kinetic energy of machines, the effect of the weights and accelerations of parts on the velocity of the fly-wheel and the proper weight of the latter to fulfil given conditions. The theory of various forms of governors is fully taken up and also the efficiency of machines.

Text book:—Theory of Machines—Angus.

27. MACHINE DESIGN:—*J. T. Lagergren.*

Departments 3, 6, 7, III Year; 1 hour per week; both terms.

The lectures in this course deal principally with the applications of the principles of kinematics and the theory of the strength of materials to the design of machine parts, such as shafting, gearing, journals, clutches, etc.

In addition to the lecture course time is spent in the drafting room where designs involving the above principles are worked out and the necessary calculations made. These designs are made as parts of some actual machine, such as an engine.

The laboratory work occupies 7½ hours per week for Department 3, 4½ hours for Department 6, and 3¼ hours for Department 7.

28. MACHINE DESIGN:—*J. T. Lagergren.*

Department 3, IV Year; 4 hours per week.

The lectures and practical work in this course are meant to supplement those of Course 27, and deal with more difficult problems and designs. The design of a complete machine is taken up, and detail drawings as well as an assembly drawing are made.

28*a*. MACHINE DETAILS:—*J. T. Lagergren.*

Departments 3, 6, 7, II Year; 1 hour per week, second term.

A course of lectures dealing with the design of details of machines.

HYDRAULICS.

29. HYDRAULICS—GENERAL COURSE:—*J. J. Traill.*

Departments 1, 3 and 7, III Year; 2 hours per week.

This is an introductory course of lectures in hydraulics, and is devoted to the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of discharge by various methods, such as orifices and weirs, the conditions of flow obtaining in open channels, artificial and natural, and in pipes flowing partially full, together with other kindred subjects.

The object of this course is to provide the student with a good working knowledge of the fundamental principle of hydraulics, such as is useful in practical work, and is necessary to the intelligent investigation of more advanced problems, such as the design of turbines, water-wheels and power plants generally.

29*a*. HYDRAULICS:—*J. J. Traill.*

Departments 2 and 8, III Year; Department 6, IV Year.

This course deals with the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of water by various methods, the conditions of flow in open channels and in pipes partly full. This work is followed by a brief discussion on pumps and other hydraulic machines.

30. HYDRAULIC LABORATORY:—*J. J. Traill.*

Department 1, III Year; 3 hours per week; one term. Departments 3 and 7, III Year; 4 periods of 3 hours each.

The work in this course is intended to illustrate the lecture course given in Hydraulics and to give the student some working acquaintance with the formulas met with in practice. Experiments are made to determine the coefficients for an orifice and the coefficients of discharge for a weir. The results of these experiments are used in measuring the discharge in subsequent experiments on meters and for the determination of hydraulic resistances in various cases of flow in pipes.

31. HYDRAULICS:—*J. J. Traill.*

Departments 1, 3 and 7, IV Year; 1 hour per week; both terms.

Following up the third year course in this subject the theory already acquired is applied to the solution of problems connected with branched pipes, water-mains discharging at various points along their length, the effect of a dam on the water level at any point on a stream and numerous other problems. The applications of hydrographic data and precipitation, evaporation and run-off relations are also considered.

31*a*. HYDRAULICS:—*R. W. Angus.*

Departments 1, 3 and 7, IV Year; 2 hours per week, both terms.

The most important question considered and to which most of the lectures are devoted is the theory of turbines and centrifugal pumps, the effect of the design on the speed, discharge power and efficiency being fully taken up.

Text books:—Hydraulic Motors—Bodmer; Centrifugal Pumps—Loewenstein and Crissey; Hydraulics—Merriman; Water Power Engineering—Mead.

32. HYDRAULICS:—*R. W. Angus, J. J. Traill.*

Departments 1, 3 and 7, IV Year; about 10 hours per week.

A laboratory course devoted to experimental work on turbines of various types and centrifugal and turbine pumps and other similar devices. This experimental work is arranged to illustrate the lectures on turbine and pump design. The experiments are made on two large turbine pumps used in the laboratory supply, as well as on apparatus specially designed for instruction. Various methods of measuring water-power and the efficiency of machines are also given.

32*a*. POWER:—*J. J. Traill.*

Departments 2, 6 and 8, IV Year; 24 hours.

A laboratory course of experiments on orifices, weirs, turbines, meters, pumps, etc.

32*b*. HYDRAULICS:—*J. J. Traill.*

Department 1, IV Year.

This is a lecture and laboratory course of six hours per week, first term, dealing with the flow of water in pipes and open channels, measurement of water, and pumps and pumping.

HEAT ENGINES.

33. THERMODYNAMICS:—*R. W. Angus.*

Departments 3, 6 and 7, III Year; 2 hours per week.

A lecture course in which the subject is treated in such a way as to make it of practical value and give a working acquaintance with the principles on which it is based. After the elementary ideas have been given and the proofs of the properties of Carnot's cycle, applications of the subject are made to the perfect gas and to saturated steam and to the various types of engines. Temperatures are taken from the air thermometer.

34. THERMODYNAMICS:—*R. W. Angus.*

Departments 1, 2 and 8, IV Year; 1 hour per week; both terms.

This course is especially designed to give the student a working knowledge of thermodynamics as applied to the perfect gas and steam so that he will be able to understand clearly the action of air compressors, steam engines, etc. After deducing general principles, the efficiency of compressed air transmission and the relative merits of different types of compressors are discussed. The steam engine and boiler are also discussed.

35. THERMODYNAMIC AND MECHANICAL LABORATORY:—*L. M. Arkley.*

Department 3, III Year; 2 hours per week, first term; 3 hours per week, second term. Departments 6 and 7, III Year; 2 hours per week, first term; 1½ hours per week, second term.

This laboratory course is designed to assist in a clearer understanding of thermodynamics, machine design and mechanics of machinery. The work in thermodynamics consists in the setting of slide valves, indicating engines measuring the brake horse-power, simple engine and boiler tests and the testing of gas and gasoline engines under various conditions. The mechanical laboratory work deals with the efficiency of belts and ropes as well as of several machines of simple construction. An examination of lubricating oils is also made by means of oil testing machines and other well-known devices. Experiments are also made on the balancing of reciprocating and rotating masses.

36. THERMODYNAMICS:—*R. W. Angus.*

Departments 3 and 7, IV Year; 2 hours per week; both terms.

This is a continuation of the introductory course, the subject being here treated from a general standpoint and the idea of entropy and of the absolute scale of temperatures being introduced. The course includes the treatment of saturated and superheated vapours, gases, the flow of fluids, chimney and boiler efficiency and the theory of various engines and other appliances including air compressors, refrigerating machines, and injectors.

Text books:—Thermodynamics—Peabody; Steam Tables—Peabody.

36*a*. THERMODYNAMICS:—*L. M. Arkley.*

Departments 3 and 7, IV Year; 1 hour per week, both terms.

Steam Power Plants. This course follows in logical order the courses on heat engines given in the second and third years. In it a study of the prime movers and auxiliary apparatus required in a power plant is made in such a manner as to indicate the proper choice of equipment under various conditions of operation.

37. THERMODYNAMICS:—*L. M. Arkley, J. H. Parkin.*

Departments 3 and 7, IV Year; about 10 hours per week.

The work in this year is a continuation and extension of the work covered in the third year laboratory course. Careful tests are made of engines of various types, such as simple, tandem and cross-compound steam engines; steam turbines; refrigerating machines; air engines; injectors and steam pumps, etc.; and an application is made of Hirn's analysis and the entropy diagram to the results obtained. A complete set of experiments is made on each machine and the result plotted so as to show clearly to the student the effect of various alterations in the adjustment of the engine on the resulting efficiency.

Several modern gas and gasoline engines and a gas producer give ample opportunity for the study of this type of engine, and facilities are provided for sampling the gas supply and exhaust.

Two experimental stacks and three boilers enable results to be obtained on boiler efficiency and chimney draft.

38. STEAM ENGINES:—*L. M. Arkley.*

Departments 3, 7 and 8, II Year; one hour per week; second term.

This course of lectures includes a discussion of the principles of action of the steam engine; also the theory and design of various simple forms of valve gears used in the operation of such engines.

39. HEAT ENGINES:—*L. M. Arkley.*

Departments 3 and 7, III Year; Department 8, IV Year; one hour per week, both terms.

This course in heat engines is intended for students in Mechanical, Electrical and Metallurgical Engineering, to be supplementary to the general course of lectures in thermodynamics.

The principal commercial forms of heat engines are dealt with in a more or less descriptive manner; special attention is given to considerations affecting the design of the ordinary forms of steam engines, gas engines and oil engines.

39 *a*. POWER:—*L. M. Arkley.*

Departments 1, 2 and 8, IV Year; 21 hours.

A course of experiments with steam and gas engines, compressed air, etc.

ARCHITECTURE.

40. HISTORY OF ARCHITECTURE:—*H. H. Madill.*

Department 4, I Year; one hour per week; both terms.

In this course the development of architecture is treated very briefly and in an elementary manner, from the Pyramids of Egypt to the present, laying special emphasis on the Egyptian, Grecian and Western Asiatic work. The antique Greek and Roman orders are studied, and the students are required to make rendered drawings in the studio of certain orders and elements. An attempt is made to develop the student's sense of proportion, and in the latter part of the second term he is required to study a simple problem in design.

41. HISTORY OF ARCHITECTURE:—*H. H. Madill.*

Department 4, II Year; one hour per week; both terms.

The Classical, Early Christian, Byzantine and Romanesque styles of architecture are studied with the aid of the lantern. The student is required to become acquainted with the best examples in these styles in order that his sense of proportion and his taste may be developed and his knowledge of the different elements extended.

42. HISTORY OF ARCHITECTURE:—*A. Wellesley McConnell.*

Department 4, III Year; one hour per week; both terms.

In this course the work of the previous year is continued, with the study of Gothic and the Renaissance.

43. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*

Department 4, II Year; one hour per week; both terms.

In this course the development of Ornament is traced from the beginning through Egyptian, Assyrian, Grecian, Roman, Byzantine, Romanesque and Moresque styles. An attempt is made to analyze ornament of the best periods and to systematize the principles followed in form and color. The development and types of mouldings are also studied.

44. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*

Department 4, III Year; one hour per week; both terms.

A continuation of the course in Ornament given to the Second Year. Instruction is given in lectures with the aid of the stereopticon. The students are required to become familiar with the characteristics and forms of the ornament used in the Gothic and Renaissance styles.

45. ORDERS OF ARCHITECTURE:—*A. Wellesley McConnell.*
Department 4, II Year; one hour per week; both terms.
Lectures on the Five Orders of Architecture, their affiliated forms and the other elements used in design. Simple problems in elementary design involving the use of the orders and other elements are set from time to time.

46. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, II Year; one hour per week; both terms.
This course is given by means of individual instruction in the classroom by criticisms of the solutions of different problems set during the year and by a series of lectures. It is in this course that the student begins the serious study of design; continued practice in architectural drawing and rendering affords the training necessary to make the student a proficient draughtsman.

47. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, III Year.
Theory and practice of Design.
This course is given by individual instruction in the studio and by lectures. The greater part of the course is devoted to problems in design, and forms a continuation of the course given in the preceding year.

48. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, IV Year.
The entire course is devoted to advanced academic training in designing the more monumental classes of buildings. The student is required to design and submit sketches and working drawings of some subject to be selected by himself.

48*a*. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, IV Year; Architectural Engineering Option.
A short course of lectures and studio work referring especially to the artistic side of the design of commercial buildings.

49. FREEHAND DRAWING AND WATER COLOR PAINTING:—*C. W. Jefferys.*
Department 4, I Year; 2 hours per week; both terms.
Drawing from still life objects. Primary freehand perspective. Primary pencil and pen and ink rendering.

49*a*. Department 4, II Year; 2 hours per week; both terms.
Drawing and monochrome painting from still life.
Drawing from the cast.
Pencil, pen and ink, and monochrome rendering.
Primary water color.
Drawing from landscape and natural objects.

49*b*. Department 4, III Year; 2 hours per week; both terms.
Drawing from the cast.
Water color from still life. Water color rendering.
Drawing from landscape and natural objects.
Students who are sufficiently advanced are admitted to the Fourth Year Life Drawing Class.

49*c*. Department 4, IV Year; 2 hours per week; both terms.
Water color from still life and from landscape.
Drawing from life.
Water color rendering.

50. MODELLING:—*J. L. Banks.*
Department 4; I Year; 2 hours per week; both terms.
The Orders. Synopsis of styles.

50*a*. Department 4; II Year; 2 hours per week; both terms.
The styles elaborated.
Problems in figures and in relation to architecture.

50*b*. Department 4; III Year; 2 hours per week; both terms.
Styles continued.
Problems, combination of figure, ornament and architecture, and their relative values.

50*c*. Department 4; IV Year; 2 hours per week; both terms.
Modelling from life.
Anatomy.
Composition of groups.

51. STRUCTURAL DESIGN:—*C. R. Young.*
Departments 1 (*Structural Engineering Option*) and 4, IV Year; 1 hour per week; both terms.

This course of lectures is devoted to the problems connected with the structural design of buildings of timber, steel and reinforced concrete. The various structural elements, such as the floors, columns, footings, walls and wind bracing, are fully discussed, and portions of typical buildings are designed in the class and drafting rooms.

Text books:—Architectural Engineering—Freitag; Steel Construction—Tucker; Structural Details—Jacoby; Architects' and Builders' Pocket Book—Kidder.

52. BUILDING MEASUREMENT:—*C. H. C. Wright.*
Department 4, I Year; 1 hour per week; both terms.
In this course of lectures the principles of measurements and mensuration with special reference to buildings will be discussed. With this is combined 4½ hours per week practice in measurements of existing buildings, quantities, etc.

53. BUILDING MATERIALS:—*C. H. C. Wright.*
Department 4, III Year; 2 hours per week; both terms.
The structural and aesthetic value of the various building materials.

54. SANITARY SCIENCE:—*C. H. C. Wright.*
Department 4, IV Year; 1 hour per week; both terms.
Modern plumbing, its design and installation.

54*a*. HEATING AND VENTILATING:—*C. H. C. Wright.*
Department 4, IV Year; 1 hour per week; both terms.
The design of different systems, where they should be used, heating specifications, etc.

ASTRONOMY AND GEODESY.

55. ASTRONOMY, ELEMENTARY:—*C. A. Chant.*
Department 1, II Year; 1 hour per week; both terms.
A course in descriptive Astronomy, explaining the ordinary astronomical terms, and describing the various celestial bodies and their motions. In the evenings opportunity will be given for identifying the stars and for observing with telescopes.
Text book:—New Astronomy—D. P. Todd.

56. ASTRONOMY AND GEODESY:—*L. B. Stewart.*
Department 1, III Year; 2 hours per week.
The course of lectures deals with the determination of time, latitude, longitude and azimuth, by methods adapted to the use of the surveyor's transit and the sextant. It is designed to fulfil the requirements of the final examinations for Ontario and Dominion Land Surveyors.
In Geodesy an account is given of the principles and methods of a secondary triangulation survey, also of the principles involved in the North-West system of survey.
Text books:—Practical Astronomy as applied to Geodesy and Navigation—Doolittle; Nautical Almanac, 1916.

57. FIELD WORK:—*L. B. Stewart, S. R. Crerar.*
Department 1, III Year; about 1 hour per week; first term.
The practical work in this subject comprises observations in the field with the transit and sextant for the determination of time, latitude and azimuth by the methods described in the lectures.

58. ASTRONOMY (Advanced):—*L. B. Stewart.*

Department 1, IV Year; 2 hours per week.

The lecture course in this subject comprises the theory and adjustment of the instruments used in connection with a geodetic survey; the methods of taking and reducing observations for time, longitude, latitude, and azimuth, with the precision required on such a survey; and other matters relating to these subjects.

59. GEODESY AND METROLOGY:—*L. B. Stewart.*

Department 1, IV Year; 2 hours per week.

The lecture course includes a description of the methods of measuring base lines and the angles of a triangulation; the geometry of the spheroid with applications to geodetic problems; the computation of geodetic positions; the solution of large triangles on the earth's surface, and the adjustment of a triangulation; trigonometric and precise spirit levelling; the determination of the figure of the earth by arc measurements, and by the pendulum; the theory of map projections, etc.

60. ASTRONOMY, GEODESY AND METROLOGY:—*L. B. Stewart.*

Department 1, IV Year; about 23 hours per week.

The practical work in the above subjects includes the observation of meridian transits for time and longitude determinations, and of prime vertical transits for latitude, with the astronomical transit instrument; the observation of meridian zenith distances of stars, and of azimuths at elongation for latitude, with the alt-azimuth; theodolite observations for azimuth; observations for latitude with the zenith telescope; the investigation of the constants of the instruments used, and the reduction of all observations; the measurement of a base line with the steel tape and with invar wires, and the determination of the constants of the tape; the measurement of the angles of a triangulation and the adjustment of the angles of network of triangles, etc.

BIOLOGY.

61. ELEMENTARY BIOLOGY:—*B. A. Bensley.*

Department 5, I Year; optional in Department 1, III Year; 2 hours per week; both terms.

A course of two lectures a week throughout the session is designed as an introduction to the whole range of biological studies. After a sketch of the scope and objects of these, the lectures will treat (*a*) of the fundamental principles of biology, as illustrated by the simplest animals and plants; (*b*) of typical forms of higher plants in ascending order; (*c*) of typical forms of animals in a similar way; and (*d*) of the structure and functions of the human body.

Students are recommended to make use of the Biological Museum in connection with this course of lectures. For reference: Jeffrey Parker, Elementary Biology; Ramsay Wright, High School Zoology; Atkinson, Elementary Botany; Huxley, Lessons in Elementary Physiology.

62. ELEMENTARY BIOLOGY:—*A. G. Huntsman and J. H. Faull.*
Department 5, I Year; 6 hours per week; second term.
An elementary course of laboratory work on the general structure and identification of plants and animals, and the use of the microscope in the examination of tissues and products.

63. ADVANCED BIOLOGY:—*J. H. Faull.*
Department 5, II Year.
A course of instruction of 3 hours per week, second term, on the Morphology and Physiology of Bacteria, Moulds and Yeast Fungi.

63*a*. ELEMENTARY BIOLOGY.—*A. G. Huntsman.*
Department 1, IV Year.
An Elementary Course of Laboratory work and demonstrations in General Biology, six hours per week, first term.

64. BACTERIOLOGY:—*J. A. Amyot.*
Departments 1, 5 and 6, IV Year; a lecture and laboratory course of 8 hours per week, second term, on elementary bacteriology.

BUSINESS.

65. ACCOUNTING:—*W. S. Ferguson.*
All Departments, I Year; 1 hour per week; both terms.
The principles of accounting; illustrated by typical accounts.

66. BANKING AND FINANCE:—*M. A. Mackenzie.*
All Departments, II Year; 1 hour per week; both terms.
Money and the instruments of credit; stocks and bonds.

67. LIMITED COMPANIES:—*J. M. Langstaff.*
All Departments, III Year; 1 hour per week; both terms.
Partnerships; the history and development of the limited liability company; the Companies Acts; Company finance.

68. CONTRACTS AND SPECIFICATIONS:—*C. R. Young.*
Departments 1 and 4, IV Year; 1 hour per week; second term.
This course of lectures deals with the fundamental principles of contract and specification writing. The critical examination of typical specifications and agreements by the class forms an essential feature of the instruction.

Text books:—Engineering Contracts and Specifications—Johnson: Elements of Specification Writing—Kirby; Specifications and Contracts—Wadell-Wait; Principles of Specification and Agreement Writing—Young.

69. COST-KEEPING, ETC.:—*J. W. Bain, H. W. Price, L. M. Arkley.*
Departments 3, 5, 6 and 7, IV Year.
Works management, mechanical specifications, analysis of costs, reports.

70. COST-KEEPING:—*H. E. T. Haultain, G. A. Guess.*
Departments 2 and 8, IV Year.
Mining and Metallurgical costs and cost keeping methods, ore contracts, smelter settlements, practical problems.

CHEMISTRY.

75. ELEMENTARY CHEMISTRY:—*E. G. R. Ardagh.*
All Departments, I Year; 2 hours per week; both terms.
A lecture course in elementary chemistry dealing with the metals and non-metals, with experimental illustrations.

76. ELEMENTARY CHEMISTRY:—*M. C. Boswell.*
Departments 2 and 6, I Year; 3 hours per week; second term.
A laboratory course to illustrate the use of the sensitive balance, to verify some of the laws which form the basis of the science, and to serve as an introduction to quantitative laboratory methods. Instruction given as required before each period.

77. INORGANIC CHEMISTRY:—*W. H. Ellis.*
Departments 5, 6 and 8, I Year; 1 hour per week; second term.
A lecture course on the elements and important inorganic compounds, supplementing Course 75.
Text book:—Introduction to General Inorganic Chemistry—Alex. Smith.

78. INORGANIC CHEMISTRY:—*L. J. Rogers.*
Departments 5 and 8, I Year; about 17 hours per week; both terms.
A laboratory course of quantitative experiments illustrating the use of the sensitive balance, and confirming the fundamental laws of chemistry; qualitative inorganic analysis; quantitative analysis of pure salts; inorganic preparations; molar weight determinations.
Text book:—Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

79. INORGANIC CHEMISTRY:—*J. W. Bain.*
Departments 2, 5, 6 and 8, II Year; 1 hour per week; first term.
A lecture course on the chemistry of the metals; a continuation of Course 75.

80. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Departments 5 and 8, II Year; Departments 2 and 6, III Year; 1 hour per week: both terms.
A lecture course on the principles of chemical analysis; select gravimetric and volumetric methods; technical analysis.

81. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Departments 1, 2, 3 and 7, II Year; 6 hours per week; one term.
Laboratory practice in elementary qualitative and quantitative analysis.
Text book:—A Smaller Chemical Analysis—Newth.

82. ANALYTICAL CHEMISTRY:—*J. W. Bain.*
Department 2, II Year; 3 hours per week; both terms.
A laboratory course in the gravimetric determination of metals and acids, with elementary volumetric analysis.
Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

83. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Departments 5 and 8, II Year; 14 hours per week; 17 weeks.
A laboratory course comprising gravimetric and volumetric methods, acidimetry and alkalimetry.
Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

84. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Department 6, II Year; 6 hours per week; both terms.
A laboratory course in qualitative and elementary quantitative chemical analysis; inorganic preparations.
Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

85. ENGINEERING CHEMISTRY:—*J. W. Bain.*
Departments 1, 2, 3, 5, 6, 7 and 8, II Year; 1 hour per week; second term.
A lecture course consisting of a study of the industrial production and application of heat and light, and of the chemistry of fuel and the products of combustion.

86. INDUSTRIAL CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, II Year; 1 hour per week; both terms.
A lecture course on the manufacture of salts, acids, alkalies and inorganic chemicals.
Text book:—Inorganic Chemistry—Thorp.

87. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 1, 2, 3 and 7, II Year; 1 hour per week; first term.
A lecture course in elementary organic chemistry.
Text book:—Theoretical Organic Chemistry—Cohen.

88. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 5 and 6, II Year; 2 hours per week; both terms.
A lecture course dealing with the aliphatic compounds.
Text book:—Theoretical Organic Chemistry—Cohen.

89. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 5, II Year; 14 hours per week; 7 weeks.
A laboratory course in organic preparations in the aliphatic series

90. PHYSICAL CHEMISTRY:—*W. L. Miller.*
Departments 5, 6 and 8, II Year; 2 hours per week; both terms.
A course of lectures on the elements of chemical mechanics, and the theory of solutions.

91. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Department 5, III Year; 19 hours per week; 16 weeks.
A laboratory course on the technical analysis of iron and steel alloys, ores, furnace products, ceramic materials, foods, gases, fuels, etc.

92. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Department 6, III Year; 11 hours per week, first term; 13 hours per week, second term.
A laboratory course in volumetric and technical analysis.

93. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Departments 2 and 8, III Year; 5 hours per week; both terms.
A laboratory course on the technical analysis of ores and furnace products.

94. ENGINEERING CHEMISTRY:—*W. H. Ellis and J. W. Bain.*
Departments 1, 2, 3, 5, 6 and 7, III Year; Department 4, II Year; 1 hour per week; both terms.
A lecture course on the application of chemistry to engineering problems; air, water, sewage, the materials of construction, explosives, etc.

95. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, III Year; 1 hour per week; both terms.
A lecture course on petroleum and its products, coal tar and its products, the destructive distillation of wood; fats, oils, soap, sugar, starch, and gums; fermentation industries, etc.
Text book:—Industrial Chemistry—Thorp.

96. CHEMICAL PLANT:—*J. W. Bain.*
Departments 5 and 6, III Year; 1 hour per week; both terms.
A lecture course on the machinery and plant used in chemical manufacturing.

97. ORGANIC CHEMISTRY (A):—*M. C. Boswell.*
Departments 5 and 6, III Year; 2 hours per week; both terms.
A lecture course on the aromatic series.
Text book:—Theoretical Organic Chemistry—Cohen.

98. ORGANIC CHEMISTRY (B):—*F. B. Allan.*
Departments 5 and 6, III Year; 1 hour per week; second term.
A lecture course on stereoisomerism, desmotropism, etc.

99. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 5, III Year; 19 hours per week; 8 weeks.
A laboratory course in organic preparations in the aromatic series; organic analysis.

100. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 6, III Year; 17 hours per week; 4 weeks.
A laboratory course in organic preparations.

101. ELECTROCHEMISTRY:—*W. L. Miller.*
Departments 5, 6, 7 and 8, III Year; Department 2, IV Year; 2 hours per week; first term.
A lecture course on elementary electrochemistry, illustrated by experiments.

102. ELECTROCHEMISTRY:—*W. L. Miller and J. T. Burt-Gerrans.*
Departments 5, 6, 7 and 8, III Year; 3 hours per week; first term.
A laboratory course in quantitative measurements to accompany Course 101.

103. INORGANIC CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, IV Year; 1 hour per week; first term; 2 hours per week; second term.
A lecture course on chemical theory.

104. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on advanced organic chemistry.

105. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 5 and 6, IV Year.
A laboratory course in advanced organic chemistry.

106. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on selected subjects in chemical technology.

107. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, IV Year; about 28 hours per week; both terms.
A laboratory course in industrial problems.

108. ELECTROCHEMISTRY:—*J. T. Burt-Gerrans.*
Departments 5, 6 and 7, IV Year; 2 hours per week; both terms.
An advanced lecture course on the theory of solutions and electrolysis, and the application to the practice of electro-deposition and electrolytic refining of metals. The course also includes lectures on the electric furnace with special consideration of efficiency.
Text books:—Electrometallurgy—Borchers; Electrochemistry—Le Blanc; Electrochemistry—Luepke.

109. ELECTROCHEMISTRY:—*W. L. Miller and J. T. Burt-Gerrans.*
Departments 5, 6 and 7, IV Year; about 28 hours per week.
A laboratory course accompanying Course 108.

110. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on the composition and examination of air, water and food; poisons and their detection.

111. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, IV Year.
A laboratory course accompanying Course 110.

112. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Department 2, IV Year, 12 hours per week; first term.
A laboratory course comprising analysis of ores and furnace products.

113. SANITARY CHEMISTRY:—*H. M. Lancaster, E. G. R. Ardagh.*
Department 1, IV Year.
A lecture and laboratory course of about 16 hours per week for one term on water supply, sewage disposal, ventilation, etc.

DESCRIPTIVE GEOMETRY AND DRAWING.

115. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
Departments 1, 2, 3, 6, 7 and 8, I Year; 1 hour per week; both terms.
This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solutions of problems relating to straight lines and planes.

116. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
Department 4, I Year; 1 hour per week; both terms.
This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solution of problems relating to straight lines and planes, special reference being made to the determination of shades and shadows.

117. DRAWING:—*J. R. Cockburn.*
Departments 1 and 2, I Year; about 16 hours per week.
Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; the plotting of original surveys; measured drawings.

118. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell.*
Department 4, I Year; about 15 hours per week.
Copying from the flat, lettering, topography, freehand drawing in black and white, both from copies and models; the graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings. Elements and principles of Architecture.

119. DRAWING:—*J. R. Cockburn.*
Department 5, I Year; about 9 hours per week.
Copying from the flat, lettering, measured drawings.

120. DRAWING:—*J. R. Cockburn.*
Departments 3, 6, 7 and 8, I Year; about 20 hours per week.
Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings.

121. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
Departments 1, 2, 3, 7 and 8, II Year; 1 hour per week; both terms.
This course of lectures is a continuation of the work taken in the first year with the following additions: Problems relating to curved surfaces, principles of shades, shadows and perspective.

122. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
Department 4, II Year; 1 hour per week; both terms.
This course of lectures is a continuation of the work taken in the First Year with the addition of problems relating to curved surfaces, shades, shadows and perspective.

123. DRAWING:—*J. R. Cockburn.*

Departments 1 and 2, II Year. Department 1, about 14 hours per week. Department 2, about 7 hours per week; both terms.

Coloring and shading as applied to both topographical and construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

124. DRAWING:—*J. R. Cockburn.*

Departments 3 and 7, II Year; about 15 hours per week; both terms.

Coloring and shading as applied to construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics, theory of mechanism and strength of materials; measured drawings; elementary design.

125. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell.*

Department 4, II Year; about 18 hours per week; both terms.

Freehand drawing including monochrome and colors; exercises from the orders of architecture; principles of shades, shadows and perspective; elementary architectural design; problems in descriptive geometry relating to solids bound by curved surfaces; solution of problems in optics and strength of materials; measured drawings.

126. DRAWING:—*J. R. Cockburn.*

Department 6, II Year.

Same as Department 3, with exception that theory of mechanism is not included.

127. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 1, III Year; 1 hour per week; first term.

This course of lectures deals with spherical projections, the principles of mapmaking, and the graphical solution of spherical triangles.

128. DRAWING:—*J. R. Cockburn, C. R. Young.*

Department 1, III Year; about 12 hours per week.

Principles of mapmaking, spherical projection, plotting of original surveys relating to topographical and railway work; problems in theory of construction; original design of various structures; measured drawings.

129. DRAWING:—*J. R. Cockburn.*

Department 2, III Year; 4½ hours per week.

Plotting of original surveys, relating to topographical and railway work and mining; problems in theory of construction; original design; measured drawings.

130. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell, C. R. Young.*
Department 4, III Year; about 16 hours per week, first term; 22 hours per week, second term.
Advanced work in monochrome and colors; problems in shades, shadows and perspective; architectural design; problems in theory of construction, including framed structures.

131. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
Department 4, III Year; 1 hour per week; first term.
Advanced work in shades, shadows and perspective.

132. DRAWING:—*J. R Cockburn, C. R. Young.*
Departments 2, 3 and 6, III Year; 3 hours per week; both terms.
Problems in design dealing with the theory of structures.

ELECTRICITY.

135. MAGNETISM AND ELECTRICITY:—*H. W. Price.*
Departments 3, 5, 6 and 7, I Year; Department 8, II Year; 2 hours per week; first term.
A course of lectures on general principles relating to magnetism, electricity, electromagnetism, electrostatics, etc., illustrated largely from engineering apparatus.

136. ELECTRIC CIRCUITS:—*W. S. Guest.*
Departments 3, 5, 6 and 7, I Year; 2 hours per week; second term.
This course of lectures concerns chiefly fundamental principles relating to electric circuits, and leads to consideration of such problems as the distribution of electric energy through lines and networks and the division of load between generators.

137. ELECTRICITY:—*W. S. Guest.*
Departments 3, 5, 6 and 7, I Year; 3 hours, alternate weeks; both terms.
A laboratory course of experiments, given in logical order, designed to demonstrate fundamental principles in connection with the generation and flow of currents in electric circuits. The work is associated with the lecture courses, magnetism and electricity, and electric circuits (135, 136).

138. ELECTRICITY:—*T. R. Rosebrugh.*
Departments 3, 5, 6 and 7, II Year: 2 hours per week; both terms.

Deals with the theory of electrical measurements, and detailed study of various methods applicable under different conditions in engineering practice to the measurement of resistance, current, potential difference, power and energy; calibration of commercial measuring instruments. The effect of choice of conditions of measurement on the accuracy of the result is considered.

139. ELECTRICAL LABORATORY:—*W. S. Guest.*

Departments 3, 5, 6 and 7, II Year; 2½ hours per week; both terms.

This laboratory course is closely associated with the lecture course 138 on electricity for the second year. The more important and useful methods of testing generators and circuits for electromotive force, resistance, current, grounds, etc., are practised, often under conditions such as occur in practice. The work also includes methods of calibration of measuring instruments for voltage, current, power and energy, and certain studies of properties of incandescent lamps.

140. ELECTRICITY:—*H. W. Price.*

Department 8, II Year; 1 hour per week; second term; Departments 5 and 6, III Year; 1 hour per week; second term; Department 2, III Year; Departments 1 and 4, IV Year; 1 hour per week.

A course designed to fit the requirements of non-electrical students. A study of essential principles is followed by discussion of electrical apparatus plants, power transmission, railways, etc.

141. POWER:—*H. W. Price.*

Departments 2, 6 and 8, IV Year; 24 hours.

Under the name "Power" a number of operating experiments are arranged to afford some familiarity with measuring instruments and direct and alternating current machinery.

142. MAGNETISM AND ELECTRICITY:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 2 hours per week; both terms.

A course of lectures on theory of magnetism and magnetic circuits, theory of direct current generators, motors, etc.

143. ALTERNATING CURRENT:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 1 hour per week.

A first course of lectures on alternating current, covering principles of measurement and leading to the analytical and graphical treatment of the simpler problems relative to alternating current circuits and machinery.

144. ELECTRICAL LABORATORY:—*T. R. Rosebrugh, H. W. Price.*

Department 3, III Year; 4½ hours per week; Department 7, III Year; 6 hours per week.

This laboratory course is intended to afford the student an opportunity to become familiar with principles involved in continuous current shunt, series and compound wound generators and motors, and, to some extent, alternating current circuits and machinery. Other sections of the work deal with the magnetic properties of iron and steel, and study of iron losses in transformers and generators.

The course is arranged to stand in close relation to the lecture courses in the subjects of magnetism and electricity and alternating current (142, 143) for III Year, and to certain design work (145).

145. ELECTRICAL DESIGN:—*H. W. Price.*

Department 7, III Year; 1 hour per week.

A course of lectures dealing with design of electric machinery and plants, accompanied by designs to be worked out in the design room.

146. ELECTRICAL DESIGN:—*H. W. Price.*

Department 7, III Year.

A design room is set apart for working out designs of electrical apparatus such as transformers, generators, motors, auxiliary apparatus, etc.

Special forms and notes are employed, arranged to suit the various studies. Certain models are provided to assist where necessary.

147. APPLIED ELECTRICITY;—*T. R. Rosebrugh.*

Department 7, IV Year.

This course deals by analytical and vector methods with the theory of alternating current circuits and machinery. Applications of theory are considered with regard to transformers, single and polyphase generators, synchronous motors and rotary converters, induction and commutating series motors, transmission lines, wave analysis, etc.

148. ELECTRICAL LABORATORY;—*T. R. Rosebrugh, H. W. Price.*

Department 7, IV Year, in connection with 147.

This laboratory course involves a thorough study of principles and properties of single and polyphase circuits and apparatus. Both vector and analytical methods are applied to the solution of problems based on tests made on laboratory machines.

The work deals mainly with constant voltage and constant current transformers, single and polyphase alternators, synchronous motors, rotary converters, induction and single phase commutating motors, transmission line, etc. The work does not consist only of factory tests, but is designed to lead the student to apply theory to practice as illustrated in the apparatus under test, with a view to an exact understanding of methods and an appreciation of limitations under many conditions. Free use is made of the oscillograph as a necessary device for "seeing" conditions under investigation. The best commercial measuring instruments are available.

GEOLOGY.

150. GEOLOGY (Elementary):—*A. P. Coleman.*

Departments 2 and 5, II Year; Department 1, III Year; 1 hour per week; both terms.

This course deals chiefly with historical geology with special reference to Canadian formations.

Reference books:—Introduction to Geology—Scott; Text Book of Geology—Dana.

151. ECONOMIC GEOLOGY. (Including Dynamical and Structural Geology):—*A. P. Coleman.*

Departments 2 and 5, III Year; 1 hour per week; first term; 2 hours per week; second term. Department 1, IV Year; 1 hour per week; both terms.

A study of the more important economic rocks, minerals and ores with their geological associations. Special attention paid to Canadian deposits.

152. ADVANCED GEOLOGY:—*A. P. Coleman.*

Department 2, IV Year; 2 hours per week; both terms.

(A) *Pre-Cambrian Geology.*—An account of the Keewatin, Huronian and Laurentian rocks of Canada, with their distribution, structural relations and economic features, and briefer accounts of similar formations in the United States and elsewhere.

Works of Reference:—Reports of the United States and Canadian Geological Surveys, of the Bureau of Mines of Ontario, etc.

(B) *Pleistocene Geology.*—Lectures on the formation and distribution of the drift deposits of North America, with brief references to other regions. Glacial, Interglacial and Postglacial beds are described, changes of climate are discussed with their probable

causes, and the economic features of the clays, sands and gravels are pointed out. A weekly excursion is made during October and November to points of interest near Toronto, which is the centre of the most important development of Pleistocene in America.

(C) *Physiography.*—A course of lectures on the surface forms of the earth, with the geological factors which have produced them. The broad features of the earth, its plains, tablelands, hills, valleys, mountains, oceans, rivers and lakes are discussed in a general way, methods of topographical surveys and mapping are referred to, and the chief physiographic areas of Canada are described.

153. MINING GEOLOGY:—*A. P. Coleman.*

Department 2, IV Year; 1 hour per week; both terms.

A course of lectures on geological problems associated with mining, typical mining regions in Canada, the United States and elsewhere being discussed from the geological side.

Works of reference:—Mineral Industry and the books mentioned under (A).

154. GEOLOGICAL EXCURSIONS:—*A. P. Coleman.*

Department 2, IV Year.

Trips to points of interest in the vicinity of Toronto.

155. ORE DEPOSITS:—*A. P. Coleman.*

Department 2, III Year; 1 hour per week; both terms.

Discussion of the origin and classification of ore deposits in a general way, the mode of occurrence of the chief metals, and statistics of production, special attention being given to the metals mined in Canada.

156. ECONOMIC GEOLOGY:—*W. A. Parks.*

Department 2, III Year; 2 hours per week; second term.

Laboratory work on ores, manner of occurrence, vein structure, etc. Geological maps of typical mining regions.

MINERALOGY.

157. ELEMENTARY MINERALOGY:—*J. E. Thomson.*

Departments 5 and 8, I Year; Department 2, II Year; 2 lectures per week; first term.

After introducing the student to the chief chemical, physical and crystallographic characteristics of minerals, the course becomes descriptive and deals with about one hundred of the minerals most important from the industrial or scientific point of view.

Text books:—Minerals and how to study them—Dana; Text Book of Mineralogy—Dana.

158. MINERALOGY:—*J. E. Thomson.*

Department 5, I Year; 4 hours per week, first term; 3 hours per week, second term. Department 8, I year; 1 hour per week; first term.

Introduction to blow-pipe analysis, determination of minerals by inspection and physical tests.

Text books:—Text Book of Mineralogy—Dana; Determinative Mineralogy—Lewis.

159. PRIMARY MINERALOGY:—*A. L. Parsons.*

Department 1, II Year; 2 hours per week; first term.

A very brief introduction to the study of minerals and rocks.

Text books:—Minerals and how to study them—Dana; Handbook of Rocks—Kemp.

160. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*

Department 2, II Year; 1 hour per week, first term; 3 hours per week, second term.

Determination of minerals by inspection and by means of physical tests; introduction to blow-pipe practice.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy—Lewis.

161. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*

Department 1, II Year; 1 hour per week, first term; 2 hours per week, second term.

Determination of minerals by inspection and by means of physical tests; study of common rock types and their identification.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

162. MINERALOGY:—*A. L. Parsons.*

Department 5, II Year; 1 hour per week; second term.

Introduction to the study of rocks; determination of minerals and rocks by means of tables based on the physical properties.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

163. ELEMENTARY PETROGRAPHY:—*T. L. Walker.*

Department 2, III Year; 1 hour per week.

A course of lectures and laboratory work introducing the student to the macroscopic study of rocks.

Text books:—Handbook of Rocks—Kemp; Rocks and rock minerals —Pirsson.

164. MINERALOGY:—*J. E. Thomson.*

Department 2, III Year; 2 hours per week.

Determination of minerals by means of the blow-pipe and physical properties.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy—Lewis.

165. GENERAL PETROGRAPHY:—*T. L. Walker.*
Department 2, IV Year. 1 hour per week.
Study of the chief rock-forming minerals and of some phases of petrography not covered in the course of the previous year.

166. PETROGRAPHY:—*T. L. Walker.*
Department 2, IV Year; 2 hours per week; both terms.
Study of the chief rock-forming minerals, of rocks in thin sections and in hand specimens.
Text books:—Rocks and Rock Minerals—Pirsson; Minerals in Rock Sections—Luquer.

167. CRYSTALLOGRAPHY:—*A. L. Parsons.*
Department 5, III Year; 1 hour per week.
A course devoted to lectures and practical work on the geometrical and optical properties of crystals, preparing the student for the study of rocks in thin sections and for the examination of crystallized substances, natural and artificial, under the polarizing microscope.

168. MINERALOGY:—*J. E. Thomson.*
Department 8, I Year; 1½ hours a week, second term.
Determination of minerals by means of the blow-pipe.
Text Book:—Lewis, Determinative Mineralogy.

169. MINERALOGY:—*A. L. Parsons.*
Department 8, II Year; 1 hour per week.
Determination of minerals by physical properties.
Text Book:—Mineral Tables—Eakle.

MINING, ASSAYING AND ORE DRESSING.

170. MINING:—*H. E. T. Haultain.*
Department 2, II Year; 1 hour per week; first term. Department 8, II Year; 1 hour per week; both terms.
An introduction to the study of mining and ore dressing methods.

171. MINING AND ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, II Year; 3 hours per week; first term.
Introductory work with rock-drills and various ore dressing appliances.

172. MINING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, III Year; 2 hours lectures per week, second term; 3 hours' laboratory work per week, second term.
General mining methods.

173. ASSAYING:—*H. E. T. Haultain, J. T. King.*
Departments 2 and 8, III Year; 1 hour lecture per week, first term; 3 hours' laboratory work per week, both terms; Departments 5 and 6, III Year; 1½ hours' laboratory work per week; both terms.
Assaying of various ores for gold, silver, lead and copper.

174. ASSAYING:—*H. E. T. Haultain, J. T. King.*
Department 2, IV Year; 1 hour lecture per week, one term; 3 hours' laboratory work per week, one term.
Continuation of the work of III Year.

175. MINING:—*H. E. T. Haultain.*
Department 2, IV Year; 1 hour lecture per week: both terms.
Special mining methods, examinations, reports

176. MILLING:—*H. E. T. Haultain, F. C. Dyer.*
Department 2, IV Year; 3 hours' laboratory work per week; both terms.
Advanced work with ore dressing appliances, complete mill tests.

177. ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, III Year; 1 hour per week; both terms.

179. ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Department 2, IV Year; 1 hour per week; both terms.

METALLURGY.

180. METALLURGY:—*G. A. Guess.*
Departments 2, 5 and 6, IV Year; 1 hour per week; both terms.
Advanced studies in the metallurgy of gold, silver, copper, lead, nickel, and zinc, metallurgical problems.

181. FERRO-METALLURGY:—*T. R. Loudon.*
Departments 1,2, 3, 5, 6, 7 and 8, III Year; 1 hour per week; both terms.
The physical properties of iron and steel and the circumstances that influence the strength, etc., of iron. The different modes of manufacture of iron and steel and the effect of different processes of making on the resulting products; explanations of specifications for iron and steel adopted by engineers.

182. METALLURGY:—*G. A. Guess, F. E. Lathe.*
Department 2, IV Year; 6 hours' laboratory work per week; second term.
Calibration of pyrometers, blast furnace smelting and copper converting, cyanidation, acid leaching of copper ores, electrolytic refining of lead and copper, electrometallurgy.

183. METALLURGY:—*G. A. Guess, F. E. Lathe.*
Departments 2, 5, 6 and 8, II Year; 1 hour per week; second term.
An introduction to the study of general metallurgy.

184. METALLURGY:—*G. A. Guess.*
Departments 2, 5 and 6, III Year; 1 hour per week; both terms.
General metallurgy.

185. METALLURGY:—*F. E. Lathe.*
Department 8, II Year; 1 hour per week, both terms.
A lecture course in the study of metallurgical fuels, their use, preparation, calorific value and temperature of combustion, introduction to the study of metallurgical processes. Problems.
Two hours' laboratory work, second term.

186. METALLURGY:—*G. A. Guess.*
Department 8, III Year; 1 hour per week; first term; 4 hours per week; second term.
The uses, properties and metallurgy of the metals except iron, with special reference to copper, nickel, lead and zinc. The study of clays and their industrial uses. An additional laboratory course of 100 hours.

186*a*. METALLURGY:—*G. A. Guess, F. E. Lathe.*
Department 8, IV Year; 2 hours per week, both terms, and 9 hours' laboratory work, both terms.
Lixiviation of copper ores, design and organization of plants, metallurgical book-keeping, metallurgical balance sheets, thermal balance sheets, electrometallurgy, electrolytic refining processes, a particular study of Canadian problems.

MATHEMATICS.

187. ALGEBRA:—*A. T. DeLury.*
All Departments, I Year; 2 hours per week; both terms.
Simple equations of one, two and three unknown quantities; quadratic equations of one and two unknown quantities; graphic representation of functions and the introduction of the gradient function; proportion and progressions; interest forms and annuities, permutations, combinations, limits, the general theory of infinite series, binomial theorem, exponential and logarithmic series.
Text book:—Intermediate Algebra—DeLury.

188. ANALYTICAL GEOMETRY:—*I. R. Pounder.*

All Departments, I Year; 1 hour per week first term; 2 hours per week second term.

The course in Elementary Analytical Geometry covers the more familiar propositions in connection with the straight line, circle, parabola, ellipse and hyperbola. The subject is treated so as to illustrate the general methods of analytical geometry.

189. TRIGONOMETRY, PLANE:—*M. A. Mackenzie.*

All Departments, I Year; 2 hours per week; first term.

Solutions of triangles and practical problems.

Text book:—Practical Trigonometry—Plane and Fawdry.

190. CALCULUS, DIFFERENTIAL AND INTEGRAL:—*S. Beatty.*

Departments 1, 2, 3, 4, 6, 7 and 8, II Year; Department 5, II Year, optional; 2 hours per week; both terms.

This is an elementary course in the infinitesimal calculus, but adequate to afford a knowledge of the character and methods of the subject and to enable students in chemistry, engineering, etc., to understand such of their text books as introduce the calculus.

191. TRIGONOMETRY, SPHERICAL:—*L. B. Stewart.*

Department 1, II Year; 1 hour per week; first term.

A course of lectures includes the derivation of formulæ and their application to the solution of triangles and to practical problems.

Text book:—Spherical Trigonometry—Todhunter and Leatham.

192. LEAST SQUARES, METHOD OF:—*L. B. Stewart.*

Department 1, III Year; 1 hour per week; first term.

The course of lectures includes: The general principles of probability, the law of error, direct measurements of equal and different weights; mean square and probable errors; indirect measurements; conditioned observations; applications to empirical constants and formulæ, etc.

Text book:—Least Squares—Merriman.

TECHNICAL PHYSICS.

195. ACOUSTICS:—*G. R. Anderson.*

Department 4, III Year.

Wave motion, propagation, reflection and transmission of sounds. Laws of vibrating strings, pipes and forks. Velocity of sound. Musical scales. Absorption of sound by various substances, use of deadening material in buildings. Amount of reverberation permissible and desirable in public buildings. Lectures and laboratory work.

196. HYDROSTATICS:—*G. R. Anderson.*

All Departments, II Year.

Laws of fluid pressure and application to machines. Density of solids and fluids, theory of flotation.

Lectures and laboratory work. Spring term.

197. OPTICS:—*G. R. Anderson.*

Departments 1, 2, 3, 4, 5, 6 and 7, II Year.

Rectilinear propagation of light, illumination, photometry, light standards. Distribution of light by reflectors and diffusers, general and selective absorption, economic values of artificial lights.

Laws of reflection and refraction, theory of optical instruments.

Light considered as wave motion, dispersion, spectrum analysis, colour phenomena, polarization.

Lectures and laboratory work, Fall term.

198. HEAT:—*G. R. Anderson.*

Departments 1, 5 and 8, III Year.

Generation and propagation of heat. General and industrial thermometry, calorimetry and pyrometry. Linear and cubical expansion, gas laws. Specific heat of solids, liquids and gases, latent heat of fusion and vaporization. Mechanical equivalent of heat. Carnot cycle.

Lectures and laboratory work, Fall term.

199. PHOTOGRAPHY:—*G. R. Anderson.*

Departments 1 and 4, III Year; Departments 3 and 7, IV Year.

The camera and its adjustments, lenses, shutters, screens. Plates for various purposes, films, prevention of halation. Lighting, exposure, development. Paper of various kinds, printing, enlargement and reduction, blue printing and allied processes. Record photography, photogrammetry and photo-surveying. Photography in colour.

Lectures Fall term, and laboratory work both terms.

SURVEYING.

205. SURVEYING:—*S. R. Crerar.*

Departments 1 and 2, I Year; 1 hour per week; both terms.

The lecture course includes the general principles; surveying with the chain, the compass and chain and the transit and chain; the applications of trigonometry to inaccessible heights and distances; mensuration of surfaces and solids, co-ordinate surveying, division of land, etc.

Text books:—Land Surveying—Gillespie; Theory and Practice of Surveying—Johnson.

206. FIELD WORK:—*S. R. Crerar.*

Departments 1 and 2, I Year; 9 hours per week; first term.

This course comprises testing chains; practice in chaining; a complete survey of a piece of land with the chain; keeping of field notes; the use of the compass and transit in surveying closed figures and traverse lines and in ranging straight lines; plotting by latitudes and departures, and otherwise computing areas.

207. SURVEYING:—*W. M. Treadgold.*

Departments 1 and 2, II Year; 1 hour per week; both terms.

This course of lectures takes up in detail, simple, reverse and compound curves as applied to railroad surveying. It also includes stadia, plane table and photographic surveying as applied to topographic work, and the main features of mine and hydrographic surveying.

Text books:—Henck, Shunk, Searles, Allen (Field books for Engineers) Theory and Practice of Surveying—Johnson; Plane Surveying—Raymond.

208. FIELD WORK:—*W. M. Treadgold, E. W. Banting.*

Departments 1 and 2, II Year; 9 hours per week; first term.

This course of instruction embraces all adjustments of the transit, accurate determination of angles of closed figure, minor problems in triangulation—ordinary and special problems as applied to railroad work in regard to curves, simple, reverse and compound, profile levelling and plotting of profile.

209. SURVEYING AND LEVELLING:—*W. M. Treadgold.*

Department 1, III Year; 1 hour per week; both terms; Department 2, III Year; 1 hour per week; first term.

This course of lectures takes up the work of the railroad engineer on construction, including profiles, cross sectioning, computation of volume of earthwork, overhaul, transition curves, laying out turnouts, frogs and switches, etc.

Also a discussion of trigonometric and barometric levelling.

Text books:—Field Engineering—Searles; Railroad Curves and Earthworks—Allen.

210. FIELD WORK:—*W. M. Treadgold, E. W. Banting.*

Departments 1 and 2, III Year; about 9 hours per week; first term.

This includes adjustments of levels and accurate check differential levelling, determination of profile, cross sectioning and computation of earthwork of located line on ground and plotting of same; also cross sectioning by use of hand level. A complete stadia topographic survey is made and plotted.

ADDITIONAL, FOURTH YEAR OPTIONS.

211. RAILWAY ENGINEERING:—*W. M. Treadgold.*

Department 1, IV Year; about 2 hours per week.

The object of this course is to make the student acquainted with the general principles of railroad and street railway engineering, and the subject will be studied from the standpoint of economic theory of location; train resistance; effect of grade, distance and curvature and rise and fall; maintenance of way; yards and terminals; tunnels, and street railway practice.

212. FIELD WORK:—*W. M. Treadgold.*

Department 1, IV Year; about 11 hours per week; first term.

The work consists of an original survey for a railroad some one or two miles in length, the work being conducted according to the most modern methods of location. Upon the completion of this work a contour map of the district surveyed is plotted in the drafting room and a line adjusted to it. This is staked out in the field, profiles taken and complete estimates of the cost of construction made.

213. SANITARY ENGINEERING.

Sanitary Chemistry (113).
Advanced Biology (63*a*).
Bacteriology (64).
Re-inforced Concrete (22).
Hydraulics (32*b*).
Miscellaneous Structures (24*a*).

Sanitary Engineering:—A lecture course of 1 hour per week, both terms, in which consideration is given to the problems of water supply and sewage disposal as viewed by the engineer. Some practice in the design of works from assumed data is afforded.

Reference books:—Sewage Disposal—Kinnicutt, Winslow & Pratt; Sewage Disposal—Fuller; Water Supplies—Turneaure & Russell.

214. HIGHWAY ENGINEERING:—

Department 1, IV Year.

A lecture and laboratory course of about 8 hours per week, dealing with materials, design and construction of highways and pavements and the testing of various materials used in such work.

215. STRUCTURAL ENGINEERING:—

Students in Civil Engineering who desire to specialize in the subjects best fitting them for designing or constructing engineers on bridge-building or other analogous work, may do so by selecting the Structural Engineering Option in the fourth year. In addition to the obligatory subjects, the following lecture and laboratory courses are provided for those selecting this option:

Theory of Structures (16).
Strength and Elasticity of Materials (17)
Iron and Steel (23).
Reinforced Concrete (22).
Structural Design (51).
Mill Building Design (24).
Miscellaneous Structures (24*a*).

216. ARCHITECTURAL ENGINEERING:—

Architectural students desiring to give special attention to the structural design of buildings may do so by electing to take the Architectural Engineering Option in the fourth year. The following subjects, in addition to those required of all students in the fourth year in Architecture, are required:

Structural Design (51).
Mill Building Design (24).
Architectural Design (48*a*).

MODERN LANGUAGES.

217. FRENCH:—*J. Squair and J. H. Cameron.*

Required in Department 4, optional in Departments 1, 2, 3 and 7, I and II Years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

218. GERMAN:—*G. H. Needler.*

Required in Departments 5 and 6, all years, optional in Departments 1, 2, 3 and 7, I and II Years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

THESIS.

9. THESIS.

Required in all Departments, IV Year.

Each student is required to prepare a thesis of between six thousand and seven thousand words on a subject approved by Council. See circular of information.

VACATION WORK.

220. CONSTRUCTION NOTES. See special circular of information.

OUTLINE OF VACATION WORK

CONSTRUCTION NOTES.

II and III Years.

The construction notes required consist of neat and complete dimensioned sketches in pencil of any structures, machines or plants which may be of interest. Any object chosen should be represented and dimensioned in such a manner that it could be completely constructed from the notes as the only available information.

From students in Department 2, who have been actually engaged during the summer with Government or other approved geological survey parties, geological field notes will be accepted in lieu of construction notes.

MASTER OF APPLIED SCIENCE DEGREE.

1. A candidate for the degree of Master of Applied Science (M.A.Sc.) shall hold the degree of Bachelor of Applied Science (B.A.Sc.) of this University.
2. He shall spend not less than one academic year in attendance as a student, in the Faculty of Applied Science, on a course of study approved by the Council.
3. He shall present a satisfactory thesis on a subject approved by the Council.
4. He shall pass such examinations as the Council may decide.
5. The candidate must register at the beginning of the academic year.

PROFESSIONAL DEGREES.

The attention of graduates is directed to the following regulations respecting professional degrees.

The following degrees have been established: Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem.E.), subject to the following regulations:

1. A candidate for one of the said degrees shall hold the diploma of the School of Practical Science or of the Faculty of Applied Science and Engineering and the degree of Bachelor of Applied Science except in the case provided for in clause 11 hereunder.
2. He shall have spent at least three years after receiving the degree of Bachelor of Applied Science in the actual practice of the branch of engineering wherein he is a candidate for a degree.
3. Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.

4. Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidate's professional experience for the purpose of clauses 2 and 3.

The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.

5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree, the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.

The candidate may be required at the option of the Examiners to undergo an examination in the subject of this thesis.

6. Notice in writing shall be sent to the Secretary not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Examiners.

7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Secretary not later than the first day of April.

8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Examiners.

9. The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.

10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the University.

11. Candidates who graduated from the School of Practical Science before June, 1905, shall not be required to hold the degree of Bachelor of Applied Science.

EXTRACTS FROM SURVEY ACTS.

From the Ontario Act Respecting Land Surveyors and Survey of Lands (R.S.O.).

"26. Any person serving as an apprentice as hereinbefore provided, may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practise as a land surveyor, but the total period of such apprenticeship and of course of study shall not exceed the

period of four years from the date of the articles of apprenticeship as above mentioned, and not less than three years of the said period of four years shall be passed in the actual service of a practising Ontario Land Surveyor.

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"28. The privilege of a shortened term of apprenticeship shall also be accorded to any graduate of the Royal Military College at Kingston or of the Ontario School of Practical Science in civil engineering or in mining engineering, or of the McGill College, Montreal, in civil engineering or in mining engineering, and such person shall not be required to pass the preliminary examination hereinbefore required for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor duly filed as required by section 32 of this Act, during twelve successive months of actual practice, after which, on complying with all the other requirements, he may undergo the examination prescribed by this Act.

"29. Such person at any time during his apprenticeship may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practise as a land surveyor, but the total period of such apprenticeship, and of course of study, shall not exceed the period of two years from the date of the articles of apprenticeship as above mentioned, and not less than twelve months of the said period of two years shall be passed in the actual service of a practising Ontario Land Surveyor."

From Act Respecting Manitoba Land Surveyors.

"28. (1) The privilege of a shortened term of apprenticeship shall be accorded to graduates of the Royal Military College of Canada and to graduates in civil engineering of the University of McGill College of Montreal, the School of Practical Science of Toronto, the School of Mining at Kingston, and graduates of Manitoba University who have taken first or second class honours in the special course in mathematics; and such graduates shall not be required to pass the preliminary examination hereinbefore prescribed for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor, duly filed as required by section 24 of this Act, during twelve successive months of actual practice of which at least six months shall be at actual practice in the field, after which, on complying with the other requirements of this Act, he may undergo the examination for commission to practise prescribed by this Act."

From British Columbia Land Surveyors' Act, 1905.

"52. Whosoever shall have followed, during at least two years, a regular course of studies in all the branches of the sciences required by law in order to be received as a land surveyor; who has attended the lectures of a British university or college where a complete course of theoretical and practical instruction is given in civil engineering, physics, and all other branches of sciences required by law in order to be admitted as a land surveyor, and who has received from such university or college, after a regular examination, his diploma or degree of a civil engineer or land surveyor, on satisfying the Board that he is duly qualified as aforesaid, may, without undergoing the examination for admission to the study of land surveying, be received as a student by any member of the Corporation practising in this Province, and shall be bound to perform only twelve months' actual service in the field as such, or, if he has obtained his degree or diploma as a civil engineer or land surveyor in less than two full years, then only such time of service which, added to the time he has devoted to his course of studies, shall complete the period of three full years; and, at the expiration of the said active service, such person, on complying with the other provisions of this section, shall have the right to present himself and undergo the examination required by law, and, if qualified, to be admitted to practise as a land surveyor for the Province as if he had served his three full years under his indentures with a practising land surveyor; but instead of paying fifty dollars he shall be obliged to pay sixty dollars as fees for his examination and commission as land surveyor."

The above section is to be taken collectively as a whole. No separate clause or sentence can be applied to any particular case.

From the Dominion Lands Act, 1908.

"Every graduate in surveying of the Royal Military College of Canada, and every person who has followed a regular course of study in all the branches of education required by this Act for admission as a Dominion land surveyor, for at least two years, in any college or university where a complete course of theoretical and practical instruction in surveying is organized, and who, after examination, has thereupon received from such college or university a diploma or certificate, shall be exempt from serving three years as aforesaid, and shall be entitled to examination for a commission after being admitted upon examination as aforesaid as an articled pupil and serving one year under articles with a Dominion land surveyor, including six months' actual practice with him in the field, on producing an affidavit from the said surveyor in said Form C, together with his own affidavit in said Form D, that he has served for one year as herein provided; but it shall rest with the Board to decide whether the course of instruction in such college or university meets the requirements of this section."

EXTRACT FROM THE ONTARIO ARCHITECTS' ACT.

"Any student who has matriculated in Arts in any university in His Majesty's dominions, or in the Ontario School of Practical Science, shall not be required to pass the preliminary examinations.

"23. Any person who applies for admission to registration as an architect after the coming into force of this Act, shall not be less than twenty-one years of age, shall have served as a student not less than five years with a principal or principals entitled to register under this Act, or with any other principal or principals approved by the Council, and have passed such qualifying examinations as may be required by this Act.

"24. (3) Any person who has graduated from the Ontario School of Practical Science shall be required to serve only three years as a student, one of which three years may be served during the vacation of such school.

"(4) Upon and after the passing of this Act, students shall serve such term as is required to be served by the provisions of this Act, under indenture to a registered architect, which indenture and any assignment thereof with affidavit of execution thereto attached shall be filed with the Registrar upon payment of such fees as the Council may by regulation direct."

LABORATORY EQUIPMENT.

THERMODYNAMIC AND MECHANICAL LABORATORY.

The University in 1909 completed the erection of a large, well-equipped building for the accommodation of the steam, gas, mechanical and hydraulic laboratories. A more complete description of the laboratories has been published elsewhere, so that the present description is only intended to give the main features.

The part of the building set apart for thermodynamics and other mechanical work is the ground floor of a room 60 ft. x 155 ft. This room is lighted entirely from the roof in a very perfect way. A part of the space 40 ft. wide running the entire length of 155 feet is served by a 3-ton travelling crane and contains the following equipment:

50 h.p. Brown engine with separate jackets on both heads and barrel of cylinder.

Two-stage Rand air compressor having compound steam cylinders, each fitted with Meyer cut-off gear. The low pressure air cylinder has Corliss inlet gear.

30 h.p. high-speed Leonard tandem compound engine with shaft governor.

15 h.p. high-speed McEwen engine.

75 h.p. two-line compound Willans engine.

15 h.p. DeLaval turbine with special nozzles for condensing and non-condensing tests.

Two 15 h.p. Leonard engines with different types of valves, which are used for valve setting.

There are also two surface condensers with air pumps so arranged that any engine in the laboratory may be made to exhaust into the atmosphere through an open heater or into one of the condensers, the change from one arrangement to the other being accomplished in a few minutes without the aid of valves.

The laboratory further contains:

A 3 ton York refrigerating machine with tanks.
An Amsler transmission dynamometer.
Apparatus for testing injectors and steam pumps.
Numerous other pieces of apparatus and instruments.

The work on internal combustion engines and producers is performed on the following:

18 h.p. Canada suction gas producer.

14 h.p. National gas engine arranged for various compressions and points of ignition.

10 h.p. Fielding and Platt engine for city gas or coal oil, having various adjustments.

8 h.p. Otto gas engine.

6 h.p. marine gasoline engine.

Ericsson air engine.

Various accessories to above machines.

Steam for the laboratory is supplied by two 50 h.p. and one 100 h.p. Babcock and Wilcox boilers, the latter having an internal superheater. These boilers are located in a separate boiler room. They are used for experimental work only and are fitted up for testing. The gases pass up through two independent chimneys, and these have been arranged so that the draft and other conditions in the chimney at any point of its height may be examined.

In smaller work-rooms off the main laboratory are placed belt and oil testing machines, apparatus for testing the efficiency of gears and machines, and for experiments in the balancing of machinery.

HYDRAULIC LABORATORY.

The hydraulic laboratory occupies two floors each 40 feet x 112 feet, which are well lighted by large windows on the side and end.

The water for the experimental work is pumped through the various pieces of apparatus from a well by means of two turbine pumping units, both of which are driven by a Belliss and Morcom compound engine of 125 h.p. running at a speed of 525 revs. per minute. Both engine and pumps have been installed with a view to using them in experimental work as well as for supply of water for other apparatus used in the laboratory.

The pumping units are capable of delivering one cubic foot of water per second against heads of 250 feet and 300 feet respectively. These units are designed and connected up so that they may be run in series giving the above discharge at 550 feet head, or they may be run in parallel giving double the discharge at a lower head. Each pumping unit consists of two two-stage pumps mounted on a common base and driven by a single pulley, and the construction and piping are such that each two-stage pump may be driven separately or that all may be driven at once, discharging separately one cubic foot per second at about 125 feet head through each of four independent pipes, or else the pumps may be run in series or in parallel. The scheme is thus well adapted to laboratory work, and under the heads used on reaction turbines about six cubic feet per second may be obtained

The laboratory further contains a large vertical steel tank 5½ feet diameter by 34 feet high with arrangements for the attachment of nozzles and other mouthpieces, etc. Connections are also arranged for reaction turbines, the tank acting as a reservoir.

The discharge from the turbines or nozzles is measured in a weir tank nearly 6 feet wide and 21 feet long, containing a contracted weir 4½ feet wide. This weir may be calibrated by two weighing tanks, each having a capacity of about 240 cubic feet.

There are three reaction turbines and two impulse wheels all ready for experiment, the power being measured by brakes and the water by weir or orifices. Amongst the reaction turbines may be mentioned the one designed and built by Escher Wyss & Co., specially for the laboratory.

Smaller orifice and weir tanks, each about 3 x 3 x 12 feet with necessary measuring tanks, are arranged for instruction in coefficients of various kinds and practice with weirs and orifices.

A Venturi meter and other meters, also an hydraulic ram and similar devices are available for testing, and good facilities have been arranged for investigating friction and other properties of pipes and fire hose.

For special investigations on turbine and centrifugal pumps, other pumps in addition to those already described have been arranged.

The basement of the laboratory contains an open trough 5 feet wide, about 110 feet long, with a large weir at one end. It is intended to use this trough for experiments on the flow in open channels, for measurements of large discharges by means of the weir, and for experiments with current meters and Pitot tubes.

Numerous pieces of smaller apparatus, together with all instruments required, have also been provided, and the laboratory equipment is believed to be very complete.

DONATIONS TO THE THERMODYNAMIC AND HYDRAULIC LABORATORIES.

The following donations to the equipment of the laboratories have been made through the kindness of those mentioned:

50 h.p. Wheeler Surface Condenser, presented by Mr. F. M. Wheeler, New York.

Blake Feed Pump, presented by the manufacturers.

6-inch New American Turbine, presented by Wm. Kennedy & Sons, Owen Sound, Ont.

Two Crown Water Meters, presented by the National Meter Co., New York, through Mr. M. Warnock, Toronto.

Rock Drill, presented by Sullivan Machinery Co., New York, through Mr. A. E. Blackwood, '95.

Marine Gasoline Engine, presented by Canadian Fairbanks Co., Montreal.

Two engines with different types of valve, presented by Messrs. E. Leonard & Sons, London, Ont.

Bundy trap from American Radiator Co., through Messrs. Russell & Gifford.

Dunham steam trap from C. A. Dunham Co.

Sectional models of valves from American Radiator Co.

Sectional model Mason Reducing Valve by Russell & Gifford.

Tanks, etc., by John Inglis Co. Pressure Fan from Sheldons Ltd., Galt.

In addition to the above, other firms have materially assisted by offering apparatus at or below cost price, among whom may be specially mentioned, The Canadian Rand Drill Co., Sherbrooke, Quebec.

PHYSICAL LABORATORIES.

The optical laboratory is equipped with Weinhold optical benches and accessories for determining the constants of mirrors and lenses and for demonstrating the construction and use of telescopes, field glasses, microscopes, etc. There is also a full equipment of optical instruments, including telescopes, microscopes, field glasses, comparators, spectrometers, level tester, photometers of various types, focometer, dynamometer, cathetometer, polariscope, projecting lanterns, etc.

The photographic laboratory is supplied with cameras for viewing' copying, enlargement and reduction, a spectroscopic camera and an electric blue printing machine and the necessary dark-rooms.

The hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balances, Jolly balance, Mohr's balance, hydrostatic press, vacuum pumps, gauges, etc.

The heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat, expansion apparatus, air thermometer, apparatus for verification of Boyle's law and pressure and boiling point curve, and for determination of the absolute expansion of mercury, Callendar's apparatus for determination of the mechanical equivalent of heat.

The acoustical laboratory is provided with sonometer, siren, forks ordinary and electric, Lissajous' and Melde's apparatus, organ pipes of various forms, manometric flame apparatus and a special equipment for work in architectural acoustics consisting of torsion chronograph, electropneumatic wind chest and standardized organ pipes and other accessories.

ELECTRICAL LABORATORIES.

Galvanometer laboratory.—The equipment of this laboratory is, in part, as follows: A set of D'Arsonval galvanometers conveniently located at tables about the laboratory, a set of resistance boxes for use with the same; measuring instruments, including ammeters, voltmeters, wattmeters, potentiometers and standard cells. Apparatus for the measurement of low resistance, including a ductor, and for high resistance, including a megger; several Carey Foster outfits and a Roller bond tester. There are also experimental lines for practice in locating faults, photometer outfits with rotating devices and various types of arc lamps.

Another room is fitted more especially for calibration of electrical instruments for alternating and direct currents. About one hundred and twenty portable measuring instruments are available for students' use, also standard instruments, including Weston laboratory standards, Kelvin balances and a Wolff potentiometer, with which the portable instruments may be compared.

Machine laboratory.—This laboratory, occupying two large rooms, contains twenty-five dynamos and motors varying in capacity from two to twenty kilowatts, adapted for experiments illustrating the properties of compound, shunt and series dynamos and motors, arc machines, as well as the use of interpoles. Switch-boards, numerous rheostats, lamp racks, starting boxes, circuit breakers, flexible cables, brakes, torsion dynamometers, tachometers, etc., are available for use with the machines.

This laboratory also contains two 15 kw., 25 cycle and two special 15 kw., 60 cycle General Electric polyphase revolving field alternators direct driven by motors, two 7½ kw. alternators, two rotary converters of 10 kw. and 5 kw. capacity, a 7½ kw. General Electric polyphase induction motor with slip ring rotor, Westinghouse three-phase squirrel cage induction motors, Wagner single phase motor and unity power factor motor, Swedish General Electric variable speed motor, Westinghouse single phase series motor, Westinghouse alternator, and several three phase and single phase induction motors; also transformers, reactive coils, and other details, as in the direct current sections of the laboratory described above, for experiments on the properties of alternating currents and alternating current apparatus in general. A constant-current transformer with its load of six series arc lamps, a three-element oscillograph, for studying wave forms, a high potential transformer and a mercury arc rectifier may also be mentioned. The students are supplied with Weston, Westinghouse and Thomson portable instruments for measuring purposes.

A motor generator set has been installed, comprising a 65 h.p. motor driving on the same shaft a 30 kw. 110 volt d.c. generator and a 30 kw. 60 cycle 110 volt alternator with direct connected enciter.

Appliances are also provided for the study of saturation and hysteretic properties of samples of iron and steel, and models for exercise in winding armatures.

High tension room. In a separate room with proper automatic devices for safety to the operator, there is installed a 20 K.W. transformer with a range of voltages up to 200,000 volts. Studies of insulators may be carried out. It is expected that the facilities for measurement of high voltage will shortly be improved by the installation of a sphere gap. Work with high frequency also is in contemplation.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the Chemistry and Mining building, on the first and second floors. The rooms are large and well lighted, and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accommodation for 112 students, each working space being supplied with water, gas and fume cupboard. The laboratory for quantitative analysis will accommodate 48 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 36 is provided for the students engaged in the study of technical chemistry; it is equipped with appliances for the preparation and testing of chemical products. A laboratory for fourth year students with accommodation for eight workers has been fitted up. Each of these laboratories has its own balance room adjoining furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. A calorimeter room has been equipped in the basement. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

ELECTROCHEMICAL LABORATORIES.

The Electrochemical laboratories, which are situated in the Chemistry and Mining building, are provided with special facilities for electrolytic work, including a large storage battery and electroplating dynamo with tanks as well as a complete set of apparatus and electrical measuring instruments. The experimental work on electric furnaces is performed in two rooms specially equipped for this purpose with rheostats and switchboard connections to a 120 kw. d.c. generator which supplies the current required.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building. One has a floor space of 17 feet x 47 feet, and the other 28 feet x 37 feet. Adjoining each is a room 15 feet x 11 feet, with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances set on a concrete pier. Each of the laboratories contains a number of melting holes for crucible fusions, various gas furnaces both for crucibles and muffles, and two large brick muffle furnaces.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation room (19 feet x 13 feet) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

METALLURGICAL LABORATORY.

This laboratory is located on the basement floor of the Mining Building. The main room has a floor space of 1,600 square feet. The equipment consists of: Two copper blast furnaces, acid lined copper converter, an American Gas Company muffle roasting furnace, a Hoskins resistance furnace for high temperature work, an Abbey ball mill, tanks for electrolytic refining and precipitation, together with several small furnaces of various types. Facilities for testing coal, pyrometric work, flue gas analysis are also provided.

There is also a laboratory with a floor space of 900 square feet for the testing of clays. The equipment, part of which is in the main Metallurgical laboratory, consists of: A large revelation kiln, down draft gas fired kiln and muffle kiln, dry pressed brick press, tile and hollow ware press. There is a large ore and apparatus storeroom and locker room with shower bath for students.

MILLING AND CONCENTRATING LABORATORY.

A detached building, 72 feet x 70 feet in area, contains the milling and concentrating equipment. It is heated, lighted and supplied with power from the main building, and is divided into two parts. The greater part, with 72 feet x 53 feet floor space, and 22 feet high, contains the milling and concentrating equipment. The machinery for the former operations consists of a five-stamp battery erected on concrete foundations, Challenge ore feeder, amalgamating plates, Wilfley table, a clean-up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore. This is driven by a 15-horsepower motor.

The concentrating part consists of a set of five revolving trommels for wet screenings, four three-compartment jigs, a trough classifier delivering three products, and two revolving buddles, Wilfley Slimer, Deister Slimer, Richard's Pulsating Classifier, Richard's Pulsating Jig, a dry sizer, besides experimental apparatus of various kinds for experimenting on the falling rates of ore particles, the settling of slimes, surface tension action in grease and flotation methods, etc. The waste products run to the same settling tanks as the tailings from the stamp battery. The ore is handled by a travelling crawl. All the machinery in this part is driven by a 10-horsepower motor.

The lower floor has been fitted up for lixiviation work with apparatus for the treatment of sands and slimes, different types of filter press, vacuum plant agitators, etc.

The plant throughout is intended mainly for experimental purposes and is made of such a size that numerous experiments can be carried out on small quantities of ore. Tests can also be made on lots of one or two tons.

The other part of the milling building with 72 feet x 17 feet floor space and 15 feet high is divided into four separate rooms. The largest of the four rooms has an area of 476 square feet and is devoted to the crushing and pulverizing of the ores preparatory to their treatment in the milling and concentrating room. It is isolated in order to confine the dusty operations as far as possible to this one room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16 inches by 12 inches, platform scales for weighing ore, a jib crane, pulleys, buckets, etc., for handling the rock. An adjoining room contains a 30 h.p. motor for driving the machinery of the crushing department, and storage bins for ore, work bench, etc. Another room with 17 feet x 15 feet floor space is furnished with a magnetic separator of the Rowan-Wetherill type, driven by its own motor.

STRENGTH OF MATERIALS LABORATORY.

This laboratory is intended for the scientific and commercial testing of materials of construction such as iron, steel, timber, concrete and masonry.

It is supplied with the following:

An Emery 50-ton hydraulic machine, built by Wm. Sellers & Co., of Philadelphia, for making tests in tension and compression.

A 100-ton screw power machine, built by Riehle Bros., Philadelphia. It is designed for making tests in tension, compression, shearing and cross-breaking, and will take in posts 12 feet long and beams up to 18 feet in length.

A Riehle 10-ton screw power universal testing machine.

A Riehle 50-ton screw power universal testing machine.

A 15-ton single lever-machine, built by J. Buckton & Co., Leeds, England.

A torsion machine, built by Tinius Olsen & Co., Philadelphia, for testing the strength and elasticity of shafting. This machine will twist shafts up to 16 feet in length and 2 inches in diameter.

A hand power torsion machine of simple mechanical construction, specially designed for the testing of short shafts of a maximum diameter of one inch.

A Riehle transverse testing machine of 5,000 pounds capacity, adapted to specimens up to 48 inches in length.

A Riehle compressometer, with spherical seat attachment for the adjustment of specimens having slightly non-parallel faces. This compressometer will receive specimens up to 10 inches in length.

An Olsen compression micrometer of standard type.

A 20,000 pound Olsen, hand power, wire testing machine, specially fitted for testing wooden columns with both fixed and pivoted ends.

A Riehle abrasion cylinder, built to the standard required by the National Brickmakers' Association, adopted in 1901.

A Page Impact Machine for testing the toughness of road metals.

A diamond core-drill for preparing specimens for the Page impact machine.

A two-cylinder Deval abrasion machine for testing the wear-resisting properties of road materials.

A Berry strain-gauge for spans of 3 inches and 8 inches.

A Nalder dividing engine. This may be used either for the precise division of scales or for the calibration of instruments intended for refined measurements.

A large number of extensometers of the usual degree of precision. These include the Bauschinger, Martens, Unwin, Ames, Riehle, Johnson, Henning (recording) and other types. In addition there are the usual scales, micrometers, telescopes and reflectors, voltmeters for the determination of metallic contact, and such other appliances as are necessary in the making of precise measurements.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labour. It is also supplied with the necessary appliances for making ordinary repairs and for making apparatus for special experiment and original investigation.

CEMENT TESTING LABORATORY.

This laboratory is fitted with all the ordinary moulds, sieves, balances, burettes, steaming and drying tanks, tables, and other appliances necessary in making the usual physical tests of a Portland cement. It is also supplied with completely equipped cabinets for individual work. In addition there are the following:

A 2,000 lb. Riehle machine fitted for either tension or compression.

A 2,000 lb. Riehle shot machine for tension.

A 2,000 lb. Fairbanks shot machine for tension.

A 1,000 lb. Olsen automatic shot machine fitted for tests in either tension or cross breaking.

An Olsen soapstone moist closet of modern design.

METROLOGICAL LABORATORY.

The department of surveying and geodesy is provided with all the ordinary field instruments, such as transits, levels, compasses, micrometers, sextants, planimeters, plane tables, tapes, chains, etc., with which is carried on the instruction in practical field operations as detailed elsewhere.

A small laboratory is also established in the basement of the observatory described below, containing the necessary instruments for the refined measurements of geodetic surveying; as, a standard yard and metre, a Rogers 10-foot comparator, an invar base measuring apparatus, a Kater's pendulum with vacuum chamber, a level trier, micrometer microscopes, etc.

The geodetic observatory in connection with this department is used for the instruction of students of the Fourth Year in taking observations for time, latitude, longitude, and azimuth by the precise methods used in connection with a geodetic survey. It contains a 10-inch theodolite and zenith telescope by Troughton & Simms; an astronomical transit instrument and an 8-inch theodolite by Cooke; two electro-chronographs; a Howard astronomical clock; a Dent sidereal break-circuit chronometer; arithmometers, etc.

GEOLOGICAL AND MINERALOGICAL LABORATORIES.

In the Chemistry and Mining building on College Street the University possesses a modern laboratory for Geology and Mineralogy.

Courses are given in laboratory work, especially in personal examination of type sets of rocks, fossils, minerals and crystal models. These laboratory exercises serve to illustrate the introductory didactic instruction.

For the encouragement of pure crystallography the laboratories are supplied with goniometers of the various types, crystal models, appliances for the cutting of oriental crystal sections and for the physical examination of the same. Practical petrography is carried on in rooms provided with type sets of rocks, both macroscopic and microscopic. Advanced students are taught to make thin sections of rocks and fossils and to study them microscopically. For students in Mining a laboratory course in the interpretation of geological maps and sections is provided. Typical mining regions are studied in detail and an opportunity is afforded for the examination of specimens illustrating economic geology.

The laboratory for the preparation of thin sections of rocks, minerals and fossils is provided with electric diamond saws and grinding appliances for the various types of work incidental to the preparation of thin sections and museum material.

A room is also provided for advanced work in cartography and geological surveying.

The departments possess 28 petrological microscopes and 5 of other types, so that it is now possible to provide advanced students with instruments and sets of thin sections for their own especial use. The blowpipe laboratory contains 156 lockers, especially designed for apparatus for students.

LIBRARY.

Rooms have been set apart in the Engineering and the Chemistry and Mining buildings for the housing of such periodicals and other literature of the University Library as is of special interest to the students of this faculty.

SOCIETIES.

THE ENGINEERING SOCIETY OF THE UNIVERSITY OF TORONTO.

Officers for 1914-1915.

President	E. D. Gray.
1st Vice-President	D. G. Hagarty.
Chairman, Civil Club	C. R. McCort.
" *Mining Club*	J. M. Muir.
" *Mech. and Elec. Club*	K. A. Jefferson.
" *Architectural Club*	T. S. Graham.
" *Chemical Club*	W. Uffelman.
Recording Secretary	H. L. McLelland.
Corresponding Secretary	R. E. Williams.
Treasurer	H. A. Babcock.
Permanent Secretary	J. E. Ritchie.
Curator	R. S. C. Bothwell.
Fourth Year Representative	W. R. McCaffrey.
Third Year Representative	J. H. Eastwood.
Second Year Representative	W. B. Honeywell.
First Year Representative	F. A. Wood.
Senior "Varsity" Representative	E. H. Scott.
Junior " "	J. F. Young.

The Society meets every second Wednesday during the academic year (except April), beginning with the third Wednesday in October. Papers are read, and discussions are held on engineering subjects. The Society publishes a journal monthly during the year, containing the best papers read at the meetings. A supply department is conducted by the Society, on a co-operative plan, through which instruments, drafting supplies, stationery, etc., may be purchased at a low cost. The Society is divided into five clubs for the purpose of affording a medium of study of matters relating in particular to the different departments of engineering.

THE INDUSTRIAL CHEMICAL CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers for 1914-1915.

Hon. President	Dean Ellis.
Hon. Vice-President	Prof. J. W. Bain.
Chairman	W. Uffelman.
Vice-Chairman	J. E. Clark.
Fourth Year Representative	W. D. Morris.
Third Year Representative	D. Boyd.
Secretary-Treasurer	G. G. MacDonald.
Curator	J. E. Musgrave.

The object of the Chemical Club is to promote the study of industrial chemistry and chemical engineering. Illustrated lectures, preceded by an informal dinner and a short musical programme, are held fortnightly, and on the following day an excursion is made to industrial chemical concerns located in the city or vicinity.

UNIVERSITY OF TORONTO ARCHITECTURAL CLUB, 1914-1915.

Hon. President	Henry Sproatt.
Chairman	T. S. Graham.
Vice-Chairman	K. C. Burness.
Secretary	H. R. Watson.
Treasurer	L. Husband.
Councillors	G. R. Gouinlock. F. R. Gibson. W. S. Kidd.
Graduates' Representative	H. H. Madill.

The Club is addressed at regular meetings by leading architects. Excursions are conducted to inspect various phases of construction work, involving work of interest to architects.

UNIVERSITY OF TORONTO MECHANICAL AND ELECTRICAL CLUB, 1914-1915.

Chairman	K. A. Jefferson.
Vice-Chairman and Fourth Year Rep.	W. G. Shier.
Secretary and Third Year Rep.	F. W. Booth.
Treasurer and Second Year Rep.	A. A. Tufford.
Curator and First Year Rep.	H. S. Weldon.

The Club meets every Thursday during the academic year for the discussion of papers relating to mechanical and electrical engineering problems.

CIVIL CLUB OF THE FACULTY OF APPLIED SCIENCE,

1914-1915.

Chairman	C. R. McCort.
Fourth Year Representative	R. G. Lye.
Third Year Representative	H. B. Norwich.
Second Year Representative	W. C. Howland.
First Year Representative	L. J. Deacon.

The Club is addressed during the academic year by practising engineers on modern methods and problems in civil engineering.

MINING AND METALLURGICAL CLUB OF THE FACULTY OF APPLIED SCIENCE.

1914-1915.

Chairman	J. M. Muir.
Vice-Chairman and Fourth Year Rep.	E. R. Emmerson.
Secretary-Treasurer and Third Year Rep.	H. Stewart.
Second Year Representative	G. Hanmer.
First Year Representative	N. Bowman.

ATHLETIC ASSOCIATION OF THE FACULTY OF APPLIED SCIENCE.

EXECUTIVE COMMITTEE, 1914-1915.

Honorary President	Prof. C. H. C. Wright.
President	J. P. Cavers.
Vice-President	W. H. O'Reilly.
Secretary-Treasurer	J. Richmond.
Fourth Year Representative	C. R. Keys.
Third Year Representative	V. R. Pfrimmer.
Second Year Representative	R. A. Barbour.
First Year Representative	J. H. Forman.

The Athletic Association has full control over all athletic clubs using the name of the Faculty of Applied Science. The Executive Committee has power to suspend any one from the privileges of membership in the Association for any breach of its regulations, and controls the finances of all athletic clubs in the aforesaid Faculty. The annual membership fee of this Association is fifty cents.

No other moneys are collected for the support of athletics in the Faculty of Applied Science without the sanction of the Executive Committee.

RUGBY FOOTBALL.

The Mulock Cup, which was presented by Sir Wm. Mulock, M.A., LL.D. to the University of Toronto Rubgy Football Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

RUGBY FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers for 1914-1915.

Honorary President	T. R. Loudon.
President	E. B. O'Connor.
Manager senior team	C. R. Keys.
Captain senior team	R. W. Catto.
Manager junior team	L. R. Shoebottom.
Captain junior team	J. R. Gilley.

ASSOCIATION FOOTBALL.

In order to encourage Association Football on the College campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers for 1914-1915.

Honorary President	C. H. C. Wright.
President	G. D. Gray.
Manager	C. A. MacDonald.
Captain	W. F. P. Purdy.

HOCKEY.

The trophy which is competed for annually among the Colleges in hockey is known as the Jennings Cup, and is the gift of the late W. T. Jennings, Mem. Inst. C.E.

HOCKEY CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers for 1914-1915.

Honorary President	C. R. Young.
President	C. R. Keys.
Manager senior team	R. V. Elliott.
Manager junior team	R. D. Heustis.

TRACK CLUB.

Officers for 1914-1915.

Honorary President	Prof. L. B. Stewart.
President	R. Workman.
Manager	K. C. Burness.

OFFICERS OF THE 2nd FIELD COMPANY CANADIAN ENGINEERS.

Officer Commanding	Major S. P. Biggs.
Captain	T. C. Irving.
Lieutenant (Acting Adj.)	S. H. Fellowes.
Lieutenant	G. M. Bramfitt.
Lieutenant	E. Pepler.
Medical Officer	J. W. Barton, M.D.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION.

Directorate.

Honorary President	R. A. Falconer, D.Litt. LL.D.
President	Prof. C. H. C. Wright.
Vice-President	V. F. Stock.
Secretary-Treasurer	Dr. J. Barton.

Directors.

Dr. W. B. Hendry. Prof. G. I. H. Lloyd. A. E. Cuzner.

The Athletic Association is now the paramount body in University athletics and has entire jurisdiction over the athletic clubs using the University name, and over their finances, members and policy, subject to the University authorities. Henceforth no financial agreement can be entered into by any such club without the sanction of the Directorate No expenditure of any kind in connection with any such club can be made without the written order of the Secretary-Treasurer of the Directorate.

BASKETBALL CLUB.

Season 1914-1915.

Honorary President	Prof. J. McGowan.
President	T. S. Graham.
Manager of Seniors	J. E. Porter.
Manager of Juniors	J. R. Gilley.

FACULTY OF APPLIED SCIENCE.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Y.M.C.A. of the Faculty of Applied Science was organized January 27th, 1905, and forms an integral part of the University of Toronto Y. M. C. A., which is a Federation of the Associations of the various Colleges and Faculties of the University. The object of the Association is to develop a true Christian manhood and to help the students in whatever way possible.

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the University, at a cost of from four dollars and a half a week upwards for comfortable lodging with board; or rooms may be rented at a cost from one dollar and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

UNIVERSITY RESIDENCES.

By the generosity of Mr. and Mrs. E. C. Whitney and other friends, the University can now offer to some hundred and fifty men the peculiar advantages of residential life and excellent accommodation within its own grounds. The Residence, opened in November, 1908, consists of three Houses situated on the north side of Hoskin Avenue, opening upon a quadrangle, the fourth side of which is formed by Devonshire Place. They stand about two hundred yards to the north of University College and of the University Dining Hall and close to the University Gymnasium and Athletic Field. The buildings are known as the South, East and North Houses.

Each House contains twenty-four single rooms, one single suite, one double room and eleven suites, a suite comprising a study and two bedrooms. A large room in each building, with an open hearth and a library has been set aside as a common room. A lavatory with hot and cold shower baths is provided for every eight men. The buildings are heated by steam and lighted by electricity.

The University supplies the table, chairs, book-case, chiffonier, bed, mattress, pillows, linen and window shades for each room; it is prepared to furnish a drop-light for a nominal rental.

Each occupant is charged $2.50 room-rent per week, payable to the Bursar four weeks in advance. The charge for each single suite is $3.50 per week. These charges cover heat, light, house-service, house-laundry, and the use of the telephone. There is no separate dining hall connected with the Residence, but board may be obtained at the adjacent University Dining Hall for $3.25 per week.

Applications for rooms must be made in writing to the Secretary of the Residence Committee (address the Registrar's Office) and must be accompanied by a deposit of $5.00. This deposit will be returned if the application be not granted, and will be forfeited if a room is assigned to the applicant and not taken by him, unless notice of his refusal of the room be received by the Secretary in writing before September 8th. It will be returned in full at the end of the College year if the room key be given back and the room and furniture left in a satisfactory condition. The following principles govern the alltment of rooms: (i) In order to be assigned a room in the Residence, either before or during the session, a student must have obtained standing at the previous spring examination, with not more than *one* condition against him. (ii) The rooms in each House will be distributed proportionately between the various Faculties and Years. (iii) A limited number of rooms will be reserved for members of the incoming First Year until September 18th. (iv) Applications will be considered in order of priority.

The University lays down three general rules, designed to prevent hazing, the use of intoxicants and gambling. The students in each House shall elect a House Committee, which is entrusted by the University with the making and enforcing of any other needed rules and with the maintenance of order. A member of the Faculty resides in each House to act as friend and adviser to the men in residence.

STUDENTS IN ATTENDANCE.

SESSION 1914-1915.

First Year.

6 Affleck, J. K...........Toronto.
6 Affleck, R. D..........Toronto.
1 Allan, F. R............Toronto.
1 Angus, J. C............Toronto.
1 Aykroyd, G. C.........Toronto.
1 Birdsall, E............Toronto.
3 Booz, F. B.............Toronto.
2 Bowman, N.......New Dundee.
1 Breen, J. M.......Long Branch.
7 Brown, W. D...Forester's Falls.
1 Brown, W. G.......Motherwell.
7 Bryant, G. F..........Midland.
1 Burton, H. R..........Toronto.
4 Bussell, E. I...........Toronto.
1 Campbell, F. W....Cooksville.
1 Carmichael, A. H.......Toronto.
5 Chamberlain, K. H.....Ottawa.
1 Clairmont, W. L...Gravenhurst.
1 Coatsworth, C. P.......Toronto.
4 Cole, B. H.............Toronto.
3 Connor, R. A....Campbellford.
1 Craigie, D. E..........Toronto.
2 Crane, J. W.....Newark, N.J.
4 Curry, W. H...........Toronto.
1 Darling, O. G..........Toronto.
1 Deacon, L. J....Winnipeg, Man.
7 DeVitis, R. M. S.......Toronto.
1 Devlin, H. K...Sault Ste. Marie.
3 Dickinson, M. E.......Hamilton
7 Duff, C. K............Hamilton
2 Duggan, S. F......Schomberg.
1 Elliott, H. J...........Toronto.
1 Ellis, F. D.............Toronto.
1 Fairclough, H. W. J...Hamilton.
5 Fasken, J. E..........Belgrave.
3 Firstbrook, J. H........Toronto.
6 Forman, J. H.........Grimsby.
7 Gardner, J. W........Hamilton.
1 Garvie, J. A...........Toronto.
7 Gemmel, K. S........Clarkson.
6 Goble, G. E.........Teeswater.
4 Gooderham, H. S.......Toronto.
1 Gordon, R. V....Victoria, B.C
3 Gorrie, H. T...........Toronto.
4 Gouinlock, G. R........Toronto.
6 Hancock, C. W.......Hamilton.
§7 Harling, T. L.........Toronto.
1 Harrison, R.......Birch Cliff.
3 Hicks, G.......Port Dalhousie.
7 Huff, R. W..........Chatham.
7 Hurry, N. S.......Owen Sound.
7 Jack, T. B., Seaford, Sussex, Eng.
7 Johnston, F. E............Mull.
1 Johnston, S. H.....Burgessville.
1 Julian, F. T.......Castlemore.
7 Kayler, K. D..........Toronto.
1 Kearns, N. H..........Toronto.
1 Langford, J. A.....Calgary, Alta
1 Latham, G. K., Scarboro Junct.
4 Livingstone, A. H...Brantford.
7 Lloyd, E. G.......Lloydtown.
3 Lymburner, M. G....Dunnville.
1 MacKendrick, G. K....Toronto.
1 Maclaren, H. J......Brockville.
7 Macpherson, G. L....Markdale.
4 McAvoy, O. H.....Stouffville.
7 McClelland, J. P........Arthur.
2 McClenaghan, V. S. C...Ottawa.
3 McCreery, H. J.........London.
1 McDonald, N. G.....Sunderland
1 McEachern, K. J.....Alvinston.
1 McGinn, P. L..........Toronto.
1 McGee, L..............Toronto.
3 McIntyre, P. F.........Perth.
3 McLennan, S. A...Vancouver, B.C.
7 McLeod, E. W.........Embro.
1 McMaster, W. S.......Toronto.
7 McNamara, C. J......Drayton.
7 McVean, J. H..........Toronto.
1 Maddock, C. O........Inwood.
7 Manby, A. W., Niagara Falls, South.
1 Mills, W. L...........Hamilton.

§ Withdrew during the session for military service.

1 Mitchell, R.............London.
1 Mitchener, J. R..........Toronto.
4 Mollard, W. A...........Toronto.
5 Musgrave, J. E. T......Toronto.
1 Norval, T. H........Brampton.
3 O'Flaherty, J. G.......London.
7 Orr, W. H...............Toronto.
7 Orr, H. W...............Toronto.
1 Parker, W. J.............Toronto.
1 Pearce, G. M............Toronto.
7 Penhale, T. W...........Exeter.
1 Pepler, S. H.............Toronto.
3 Peters, J. H.............Toronto.
1 Ramsay, W. B.....Lumsden, Sask.
1 Rayner, G. V..........Hamilton.
2 Richardson, C. A..Cleveland, O.
7 Riley, G. W........St. Catharines
3 Robertson, W. D.......Toronto.
7 Robertson, W. G....Palmerston.
1 Robinson, D. A.....Leamington.
1 Rovsky, J...............Toronto.
1 Sagar, W. L.............Toronto.
1 Samuel, M. ....Toronto.
5 Schell, M. D......Woodstock.
1 Scott, C. R........North Bay.
1 Scott, D. G.............Toronto.
3 Scott, W. J........Grand Valley.
7 Shephard, G. R.........Toronto.
3 Simmers, J. A...........Toronto.
1 Simpson, F. W........Thornhill.
7 Smith, W. M........Brantford.
7 Souter, J. M..........Hamilton.
1 Stalker, C. H...........Toronto.
1 Steele, G. E.............Toronto.
7 Stephens, W. H. H., Brampton.
7 Sutherland W. F. B....Toronto.
1 Sweetman, A. K.........Toronto.
1 Taylor, F. H.............Toronto.
1 Thompson, H. G.......Belmont.
7 Tracy, G. F.............Toronto.
7 Vernon, A. A. H.......Toronto.
3 Weir, M. L...............Toronto.
7 Weldon, H. S...........Oakwood
7 Wigle, G. B............Ruthven.
7 Willey, C. M..........Ruthven.
3 Williams, P. E..........Toronto.
1 Wimperly, C. C.........Toronto.
7 Wood, F. A..............Toronto.
7 Woonton, W. G........London.
4 Young, T. J.............Toronto.

Second Year.

1 Aggett, W. H...........Toronto.
7 Andrew, W. B.........Chatham.
§7 Armstrong, W. D..Owen Sound.
1 Ball, O. V...............Toronto.
7 Ballinger, J..........Streetsville.
4 Banigan, J...............Toronto.
7 Barbour, R. A..........London.
7 Bauer, W. R...........Waterloo.
3 Bell, E............... Seaforth.
1 Berry, A. E..........Berryland.
7 Bingham, S. B.........Hamilton.
1 Bishop, W. A........Owen Sound
3 Booth, G. E.............Toronto.
1 Bothwell, R. S. C.......Toronto.
7 Brown, H. S...........Lansing.
7 Bryans, F. M...........Toronto.
7 Bumstead, S. W...Owen Sound.
1 Burn, G. A. H.......Janetville.
7 Burton, C. E..........Kirkton.
7 Burwash, N.........Haileybury.
7 Byers, E. S..........Chatham.
1 Christie, F. C.......Yorkton.
7 Colleran, J. C.....Port Arthur.
1 Coon, H. F............Hamilton.
1 Corman, E. H.........Hamilton.
7 Cross, R. A...........Hamilton.
1 Crysler, R. A...........Toronto.
1 Dafoe, E. R...........Napanee.
1 Dale, W. P........Brampton.
1 Darch, F. C.............London.
5 Dickson, J. V...........Toronto.
1 Dowling, H. L..........Toronto.
7 Durbrow, P. A.........Carswell.
1 Dustan, E. B........Pictou, N.S.
7 Eyre, R. T..............Toronto.
7 Ferrier, D. W...........Toronto.
7 Forster, C............Kingsville.
1 Fraser, J. A............Ilderton.
4 Gibson, F. R............Toronto.
2 Gilley, E. R., New Westminster, B.C.
1 Gilley, J. R., New Westminster, B.C.
1 Graham, D. S.......Inglewood.
7 Gram, J. I..............Weston.
1 Greatrex, W. K..........Toronto.
4 Haldenby, E. W.......Toronto.
7 Hanly, A. F............Almonte.
2 Hanmer, G. ....Toronto.
3 Harris, A. B............Toronto.
7 Harrop, C. E...........Garnet.
1 Hawkey, R. R.........Grimsby.
3 Henderson, M. G..........Tara
7 Hewson, C.........Port Hope.
§1 Hoag, C. K............Toronto.
1 Holland, U. C.........London.
6 Honeywell, W. B.......Tyrone.

§ Withdrew during the session for military service.

2 Howes, E. A.........Harriston.
7 Huestis, R. D..........Toronto.
1 Hughes, C. A.....Mimico Beach.
4 Hume, A. G...........Toronto.
1 Hunter, W. H..........Toronto.
1 Hurlburt, R. W......Mitchell.
7 Hutcheson, G. F...Huntsville.
1 Ingersoll, L. H......Woodstock.
3 Ives, V. E...........Colborne.
1 Jamieson, K. W.........Berlin.
1 Johnston, E. W......Harriston.
7 Johnston, M......... Clayton.
1 Jones, R. E.........Meyersburg
7 Klingensmith, C. R...Windsor.
6 Knight, A. G..........Toronto.
5 Lawson, O. G...........London
1 LeClair, W. J..........Ottawa.
1 Legate, J. H.......Owen Sound.
7 Levesque, L...Chicoutimi, Que.
5 Macdonald, G. G.......Toronto.
1 Macdonald, J. A........Toronto.
§5 Maclean, A. P........Toronto.
3 McCandlish, S. G.....Hamilton.
2 McClelland, H. L.....Cooksville
1 McEwen, G. A., Yellow Grass, Sask.
3 McIlhargey, E........Stratford.
1 McLean, J. R.......Palmerston.
1 McGinn, F............Toronto.
7 McKinley, F. A......Wyoming.
1 Manning, R. C........Hamilton.
4 Mathers, A. S.........Waterloo.
§7 Mayberry, F. C.....Stratford.
1 Mitchell, F. L., St. Kitts, B.W.I.
1 Moorehouse, E. L., Medicine Hat, Alta.
7 Morgan, D. M.....Streetsville.
1 Newman, C. E., Winnipeg, Man.
7 Nichol, W. J........Dunnville.
1 Nicholson, H. R......Hamilton.
1 Nixon, W. H...........Toronto.
1 Norris, A. F...........Toronto.
1 O'Brien, J. E..........Toronto.
7 Offerhaus, W. A. R.....Toronto.
1 Parr, H. A.......Calgary, Alta.
1 Peace, W. J........Bartonville.
1 Pearson, G. P.......Schomberg.
1 Pool, C. L....Newport News, Va.
1 Proctor, W. D..........Sarnia.
§1 Purchas, C. M. G., Morant Bay, Jamaica.
7 Ratz, R. D..............Elmira.
7 Reed, H. ....Toronto.
3 Reylea, J. D...........Prescott.
1 Ryan, T. J. L.......Brantford.
2 Sharman, J. E.........Toronto.
1 Shoebottom, L. R.......London.
1 Smith, C. H.......St. Thomas.
7 Smithson, E. W........London.
3 Snider, A. M..........Waterloo.
1 Sohn, G. H...Indianapolis, Ind
1 Stephenson, G. E.......Varna.
1 Stevenson, C. W. G.....Guelph.
3 Swan, A. W., Edinburgh, Scot.
1 Taylor, R. E......S. Woodslee.
1 Thomson, A. P.........Toronto.
1 Thompson, B........Port Hope.
4 Thompson, C. C........Toronto.
1 Tilston, C. E..........Toronto.
3 Tindale, C. E. W...Chatsworth.
7 Titus, O. W.........Gore Bay.
1 Topping, V............Toronto.
7 Tufford, A. A.........Hamilton.
7 Tuttle, H. A......Niagara Falls.
5 Tyrrell, E. J...........Toronto.
3 Vaughan, O. D.........Toronto.
1 Wait, G. E............Ottawa.
2 Wallace, H. D.........Toronto.
7 Wallace, J. S. M...........Galt.
7 Ward, J. ....Waterford.
1 Warwick, R. S.......Brussels.
4 Watson, H. R..........Toronto.
1 Webb, G. A...........Toronto.
1 Whately, G. A......Thornbury.
1 Willmott, L. E.........Toronto.
1 Wood, G..........Kincardine.
1 Wood, N. C.....Kamloops, B.C.
2 Young, J. F............Toronto.

Third Year.

1 Allan, E. B............Toronto.
6 Anderson, C. C........Windsor.
1 Armstrong, T. E...Science Hill.
1 Babcock, H. A.........Toronto.
7 Ball, F. C. W...........London.
1 Barnes, L. F.........Hamilton.
1 Bemrose, B. W.........Toronto.
5 Birrell, W. G.........Pinkerton.
7 Booth, F. W...........Toronto.
6 Boyd, D..............Toronto.
5 Brown, N. B...........Toronto.
§1 Brown, W. G...........Acton.
3 Breuls, H. E...........Toronto.
§7 Cavers, J. P..............Galt
3 Chapman, J. R............Galt.
7 Cheney, S. K....Vankleek Hill.
5 Clark, J. E............Toronto.
1 Crosby, E.............Toronto.

§ Withdrew during the session for military service.

7 Cumming, K............Eberts.
3 Cunningham, J. N. Moose Jaw, Sask.
7 Cunningham, L. L. Carlyle, Sask.
1 Dale, R. S..............London.
7 Dandeno, L. G........Hespeler.
7 Daniels, T. A..........Ingersoll.
3 Delisle, J. L....Chicoutimi, Que.
1 Dobbin, W. L..........Toronto.
1 Eastwood, J. H......Peterboro.
1 Edmonds, C. W.........Simcoe.
7 Flegg, R. L......Smith's Falls.
3 Fleming, A............Toronto.
7 Fraser, R. A...........Toronto.
1 Gaboury, L. F.........Toronto.
1 Gage, C. E...........Hamilton.
1 Gardner, D. B.........Toronto.
7 Gurnett, E. G......Owen Sound.
1 Gurofsky, M...........Toronto.
1 Hadley, W. F.........Chatham.
1 Hagarty, D. G..........Toronto.
1 Hagedorn, G. C.........Berlin.
1 Hare, R. M............Toronto.
1 Harron, L. W..........Toronto.
1 Hastings, C. E..........Toronto.
4 Hoidge, R. T. C........Toronto.
3 Hopkins, H. R.......Burlington.
7 Hubbert, S. J..........Toronto.
4 Husband, L. ....Hamilton.
1 Jackson, K. B., Manchester, England.
7 Kelleher, J.............Toronto.
4 Kidd, W. S.............Ottawa.
7 King, G. F.............Simcoe.
1 Kirby, J. R.............Toronto.
1 Kirby, R. W...........Toronto.
3 Kirn, R. W..........Peterboro.
6 Krug, S. J.............Chesley.
1 Lee, L. A..............Toronto.
§7 Little, H. B., New Westminster, B.C.
§2 Macdonald, C. E......Toronto.
3 Macdonald, R. A.....Stratford.
7 Macfarlane, A. H., Victoria, B.C.
1 McColl, J. R...........Toronto.
2 McCrodan, B. A.....Belleville.
7 Manning, T. R.........Toronto.
1 Margison, O.....Victoria, B.C.
1 Matthews, F. J.........London.
1 Mendizabal, A. R., Oruro, Bolivia, S.A.
3 Merry, F. S.........Stratford.
1 Mitchell, W. B.........London.
3 Newcombe, J. C........Toronto.
1 Ney, C. H...............Aurora.
2 Norton, F. W.....Evanston, Ill.
1 Norwich, H. B.........Toronto.
7 Nott, G. E..............London.
1 O'Callaghan, E. A.....Cornwall.
6 Oliver, C. E..New Westminster, B.C.
6 O'Reilly, W. H........Toronto.
§3 Ormsby, J. A. N.......Toronto.
§7 Panter, J. S........Belleville.
3 Paterson, W. B.........Ilderton.
1 Pfrimmer, V. R......Stratford.
1 Powell, N. L..............Delhi.
1 Pringle, J. E..........Hamilton.
7 Richmond, J......Smith's Falls.
§1 Ritchie, W. W........Toronto.
1 Rose, H. C..............Guelph.
1 Ross, S. R..............Toronto.
7 Ross, S. W.............Toronto.
3 Russell, J. P...........Toronto.
4 Schwartz, G. B.........Toronto.
1 Scott, W. B............Toronto.
1 Seaborne, R. L..........Toronto.
1 Sievewright, R. L......Windsor.
4 Skinner, J. L...........Toronto.
7 Smelser, W. A........Hamilton.
1 Smythe, C.............Toronto.
1 Snow, G. B............Toronto.
1 Speirs, R. M...........Toronto.
1 Stark, W. H...........Toronto.
2 Stewart, H...........Eglinton.
1 Storms, F. S...........Toronto.
1 Stratford, G. S.......Brantford.
1 Sureda, J. A., Utuado, Porto Rico
§6 Swinnerton, A. A......Toronto.
4 Swinnerton, A. F. R. W. Toronto.
7 Thomas, A. M.........Toronto.
1 Tremayne, J. E.....Sutton West.
2 Tomlinson, B. C....Langstaff.
4 Tyrwhitt, R...........Toronto.
5 Ward, F. W............Toronto.
1 Ward, R. C............Toronto.
3 Washington, H. A......Toronto.
4 Waters, D. M.......Belleville.
3 Watson, J. M.......Woodstock.
7 Wells, A. R...............Blyth.
7 Weppler, H. S.........Hanover.
1 Whaley, A. B..........Toronto.
1 Wheelock, C. H....Orangeville.
7 Widdicombe, A. E., St. Catharines.
§1 Williams, R. E........Toronto.
3 Wilson, J. S...........Kenora.
3 Youell, L. L.............Aylmer.

§ Withdrew during the session for military service.

Fourth Year.

1 Adlard, L. S...........Toronto.
1 Anderson, A. C........Toronto.
1 Arksey, G. A..........Toronto.
2 Arthur, R. M..........Sudbury.
§1 Austin, F. D.........Peterboro'.
7 Ball, W. V............Toronto.
7 Banbury, T. R.........Ingersoll.
7 Beacock, V. A.........Toronto.
1 Bennett, P.......Calgary, Alta.
7 Birrell, A. L...........Toronto.
7 Black, H. M...........Toronto.
1 Blackwell, R. H. H., Peterboro'.
7 Bonus, W. H.........Peterboro'.
6 Breithaupt, J. E.........Berlin.
1 Brouse, E. D. G........Toronto.
1 Brown, L. R............Toronto.
1 Buchanan, F. M.......Blenheim
7 Budd, H. C... ....Palmyra.
4 Burden, H. J..........Toronto.
4 Burness, K. C.........Toronto.
1 Carmichael, F. N. D....Toronto.
4 Catto, R. W...........Toronto.
7 Chandler, F. H.......Stratford.
1 Christner, J. C...........Berlin.
1 Cockburn, R. M.......Toronto.
7 Code, W. W...........Toronto.
1 Cook, J. D............Toronto.
1 Crealock, A. B.........Toronto.
1 DaCosta, W. R........Toronto.
§1 Daniel, N. H.........Toronto.
3 Davey, C. G...........London.
7 Davidson, G. P........Toronto.
4 Davidson, J. J.........Toronto.
7 Dean, W. A...........Toronto.
1 Deverall, E. V.........Toronto.
7 Dibblee, J... ....Toronto.
1 Dickson, W. L.........Toronto.
1 Downey, G. A..........Orillia.
4 Edwards, G. R........Toronto.
7 Elliot, R. V............Norwich
2 Emmerson, E. R....Port Arthur.
1 Evans, A. C..........Oakville.
1 Falconer, H. S.......Shelburne.
7 Flannery, D. T.....North Bay.
1 Ford, J. W. H..........London.
1 Fraser, W. R......Brantford.
1 French, W. G..........Toronto.
4 Frid, H. P.......Winnipeg, Man.
1 Fulton, W. J...........Toronto.
1 Galbraith, R. D........Toronto.
1 Geale, C. N.....Peterborough.
6 Glass, L. G.............London
1 Gooderham, G. A......Torònto.
7 Gould, W. H. R.......Uxbridge.
4 Graham, T. S..........Toronto.
1 Grange, E. R..........Toronto.
1 Gray, E. D............Toronto.
7 Gray, G. D..........Windham.
1 Gray, G. S............Meaford.
3 Gray, J..........Victoria, B.C.
7 Griffiths, G. E.........Thorold.
2 Haas, M. S............Toronto.
2 Halford, D. S..........Toronto.
2 Hall, W. T............Toronto.
2 Hanlon, J. E............Arkell.
1 Hayward, C............Toronto.
2 Higgins, L. T..........Toronto.
1 Hogarth, C. E........Hamilton.
7 Ireland, T. P.........Hamilton.
7 Ironside, G. A.........Ilderton.
1 Jackson, C. W. H....Coboconk.
7 Jefferson, K. A...Arcola, Sask.
1 Johnston, G. W. F., Lethbridge, Alta.
7 Jones, C. M...........Toronto.
2 Jones, R. D............Toronto.
1 Jupp, E. H.............Orillia.
7 Keys, C. R........Newark, N.J.
5 Kohl, H............. .Toronto.
1 Laidlaw, R. E..........Durham.
1 Lamb, G. J..........Walkerton.
7 Lawrence, G. W., Port Dalhousie
1 Leach, H. O...........Toronto.
3 Lloyd, R. H..........Wingham.
§1 Lockhart, W. E.....Newcastle.
1 Longworthy, W. E., Regina, Sask.
1 Lount, C. T.....Regina, Sask.
1 Lye, R. G.............Toronto.
1 Macdonald, C. A.....Ridgetown
2 Macdonell, I. M........Toronto.
1 Macpherson, H. E. St. Thomas.
1 McCaffrey, W. R.......Toronto.
1 McCort, C. R......Port Arthur.
1 McDonald, K. D., Vancouver, B.C.
1 McDonald, J. P.....Brantford.
3 McGie, W. R.........Belleville.
1 McGugan, D. F....Mt. Brydges.
7 McIntyre, J. S......Peterboro.
1 McKague, E. V........Toronto.
7 Martin, E. T..Waddington, N.Y.
1 Meitz, W. H.........Pembroke.
2 Mills, F. L............Toronto.
1 Mitchell, G..........Hamilton.
1 Mogan, J. T...........Toronto.
7 Monteith, E. M.Edmonton, Alta.
4 Morris, A.. ....Toronto.
1 Morris, B. M........Pembroke.
5 Morris, W. D.........Warwick.
2 Muir, J. M............Toronto.
1 Neilson, M. A........Toronto.

§ Withdrew during the session for military service.

1	Nicklin, H. S.	Acton.
1	O'Connor, E. B.	Toronto.
1	Omand, W. M.	Regina, Sask.
1	Paul, R. A.	Listowel.
3	Payne, A. N.	Toronto.
1	Pearce, L. P.	Yorkton, Sask.
1	Peck, H. M.	Toronto.
1	Peterkin, S. M.	Toronto.
1	Porter, C. F.	Windsor.
1	Porter, J. E.	Wingham.
2	Powell, W. D.	Simcoe.
7	Purdy, W. F. P.	Wardsville.
1	Raley, W. E.	Lethbridge, Alta.
1	Rance, C. C.	Toronto.
1	Rankin, G.	North Bay.
§1	Redman, W. B.	Birch Cliff.
3	Reid, F. G.	Belleville.
6	Relyea, P. J.	Cornwall.
1	Richardson, A. A.	Peterboro.
3	Robertson, A. S.	Walkerton.
1	Rose, J. T.	Toronto.
7	Ross, A. C.	Toronto.
2	Ross, J.	Toronto.
1	Rowe, H. M.	Norwich.
7	Russell, W. E.	Waubaushene.
4	Rutter, G. W.	Birch Cliff.
7	Ryan, W. M.	Owen Sound.
7	Savage, E. W.	Navan.
7	Scott, A. G.	Smith's Falls.
1	Scott, E. H.	Toronto.
1	Scott, R. G.	Toronto.
7	Seymour, N. F.	Essex.
1	Shaw, J. H.	Toronto.
1	Sheehy, J. S.	Peterboro.
3	Shier, W. G.	Vancouver, B.C.
1	Simpson, C. N.	Toronto.
§1	Sinclair, R. B.	Toronto.
3	Smyth, A. H.	Strathroy.
7	Steel, W. A.	Toronto.
2	Stitt, J. B.	Haileybury.
§3	Stone, J. D.	Chatham.
7	Storey, G. C.	Wawanesa, Man.
2	Stroud, J. E. C.,	Bridgetown, Barbadoes.
7	Suhler, A. N.	Pt. Edward.
7	Taylor, A. N.	Granton.
1	Thompson, H. B.	Bloomfield.
3	Tillson, G. D.	Tillsonburg.
§1	Tillson, L. B.	Bracebridge.
1	Tom, J. A.	Goderich.
5	Uffelmann, W.	Waterloo
1	Vezina, L. P.	Chicoutimi, Que.
7	Ward, A. L.	Niagara Falls.
1	Weir, F. E.	Burford.
1	West, C. W.	Campbellford.
1	Williams, J. N.	Burlington.
1	Wilson, J. C.	Wingham.
1	Wood, H. A.	Toronto.
7	Wyman, H. K.	Essex.

Candidates for Degree of M.A.Sc.

Dobson, W. P.	Fordwich.
Richardson, C. W.	Toronto.
Rolfson, O.	Walkerville.
G. E. Treloar	Toronto.

Students of other Faculties Taking Instruction in Assaying, Surveying, Etc.

Carter, F. H.	Toronto.
Clarke, T. A.	Toronto.
Forsyth, E.	Toronto.
Hughson, H. M.	Toronto.
Hume, G. S.	Toronto.
Johnstone, R. W.	Toronto.
Linton, G. M.	Toronto.
Mulloy, G. A.	Aurora.
Snow, R. L.	Judd-Haven.
Todd, E. W.	Toronto.

Summary.

First Year Students	132
Second Year Students	140
Third Year Students	120
Fourth Year Students	167
Students of Other Faculties	10
Candidates for M.ASc. Degree	4
	573

§ Withdrew during the session for military service.

Scholarship.

Awarded by the Boiler Inspection and Insurance Co. of Canada for General Proficiency in the Third Year in Mechanical Engineering.

1912. A. S. Anderson
1914. C. G. Davey
1913. E. D. W. Courtice

Degree of Master of Applied Science (M.A.Sc.).

1914. Murdie, W. C.

PROFESSIONAL DEGREES AWARDED SINCE 1910.

Degree of Civil Engineer (C.E.).

1913. Dallyn, F. A.
1914. Gillespie, P.
1914. Hill, S. N.
1914. Hogg, T. H.
1913. James, E. A.
1913. Marrs, C. H.
1911. Swan, W. G.
1914. Young, C. R.

Degree of Mining Engineer (M.E.).

1913. Forbes, D. L. H.
1910. McMillan, J. G.
1912. Burwash, L. T.

Degree of Mechanical Engineer (M.E.).

1913. Christie, A. G.
1913. Darling, E. H.
1913. Manson, G. J.
1913. Smart, R. S.

Degree of Electrical Engineer (E.E.).

1913. Mitchell, P. H.
1914. Sara, R. A.

GRADUATES.

Graduates are requested to inform the Secretary of changes in their addresses.

1881.

1. J. L. Morris, C.E., O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.

1882.

1. D. Jeffrey, Windsor, Missouri
Contractor.
1. J. H. Kennedy, C.E., O.L.S., Vancouver, B.C.
Chief Engineer, Great Northern Ry.
1. J. McAree, B.A.Sc., D.T.S. (deceased).

1883.

1. D. Burns, O.L.S., A.M. Can. Soc. C.E., Pittsburgh, Pa.
Instructor in Mathematics and Plan Drawing, Carnegie Technical Schools.
1. G. H. Duggan, M. Can. Soc. C.E., Lachine, Que.
Vice-President and Chief Engineer, Dominion Bridge Co., Ltd.
1. J. W. Tyrrell, C.E., D.L.S., Hamilton, Ont.
Tyrrell & MacKay, Consulting Engineers and Surveyors.

1884.

1. W. C. Kirkland, (deceased).
1. J. McDougall, B.A. (deceased).
1. A. R. Raymer, Pittsburgh, Pa.
Assistant Chief Engineer, P. & L. E. Ry.
1. James Robertson, O.L.S., Toronto, Ont.
Commissioner, The Canada Co.
1. E. W. Stern, M. Am. Soc. C.E., 101 Park Ave. New York.
Consulting Engineer.

1885.

1. J. F. Bleakley, Bowmanville, Ont.
Civil Engineer.
1. H. J. Bowman, D. & O.L.S., M. Can. Soc. C.E., Berlin, Ont.
Bowman & Connor.
1. E. E. Henderson, O.L.S., Henderson, P.O., Me.
Civil Engineer.
1. B. A. Ludgate, O.L.S., Pittsburgh, Pa.
Assistant Engineer, P. & L. E. Ry.
1. O. McKay, O.L.S., Walkerville, Ont.
Civil Engineer and Surveyor.

1886.

1. A. M. BOWMAN, D.L.S., Pittsburgh, Pa.
Pennsylvania Contracting Co.
1. E. B. HERMON, D. & O.L.S., Vancouver, B.C.
Assistant Engineer Vancouver Power Co.
1. ROBERT LAIRD, O.L.S., Haileybury, Ont.
Laird & Routley, Engineers and Surveyors.
1. T. KENNARD THOMSON, D.Sc., C.E., M. Can. Soc. C.E., M. Am. Soc. C.E., Hudson Terminal Building, New York.
Consulting Engineer.
1. H. G. TYRRELL, C.E., A.M. Can. Soc. C.E., 540 Judson Ave., Evanston, Ill.
Consulting Engineer.

1887.

1. J. C. BURNS (deceased).
1. A. E. LOTT, Los Angeles, Cal.
Consulting Railway Engineer, 441 Bradbury Building.
1. A. L. MCCULLOUGH, O.L.S., B.C.L.S., A.M. Can. Soc. C.E., Nelson, B.C.
Engineer and Surveyor.
1. F. MARTIN, M.B., O.L.S.,
Physician.
1. C. H. PINHEY, D. & O.L.S., 110 Wellington St., Ottawa, Ont.
1. J. ROGERS, O.L.S., Mitchell, Ont.
Town Engineer.

1888.

1. J F. APSEY, O.L.S., 3 N. Calvert St., Baltimore, Md.
Assistant Division Engineer, Baltimore Sewerage Commission.
1. W. T. ASHBRIDGE, C.E., 1444 Queen St. E., Toronto, Ont.
Engineer and Surveyor.
1. EDWARD F. BALL, A.M., Can. Soc. C.E., 335 Madison Ave., New York, N.Y.
Chief Assis ant Engineer of Resurveys, Land and Tax Department, N. Y. Central and Hudson River Railroad.
1. D. B. BROWN, O.L.S., Quebec, P.Q
Locating Engineer, Transcontinental Ry. (G.T.P.)
1. C. M. CANNIFF, Toronto, Ont.
Consulting Engineer.
1. H. J. CHEWETT, B.A.Sc., C.E., A.M. Can. Soc. C.E., Manning Arcade, Toronto, Ont.
Mechanical Engineer, Evans Rotary Engine Co., Ltd.
1. J. GIBBONS, D. & O.L.S., Ottawa, Ont.
Surveying Staff, Department of Interior.
1. R. MCDOWALL, O.L.S., C.E., A.M. Can. Soc. C.E., Owen Sound, Ont.
Town Engineer.
1. G. W. MCFARLEN, O.L.S., Toronto, Ont.
City Engineer's Staff.
1. C. J. MARANI, Anacortes, Wash.
Designing and Consulting Structural Engineer for the Russia Cement Co.
1. G. R. MICKLE, B. A., Toronto, Ont.
Mine Assessor, Province of Ontario.
1. J. H. MOORE, O.L.S., Smith's Falls, Ont.
Town Engineer.
1. G. H. RICHARDSON, Edmonton, Alta.
Managing Director, Yellowhead Pass Coal & Coke Co.

1888—*Continued.*

1. K. Rose, Curry Bldg., Toronto.
Manager, Evans Rotary Engine Co. of Canada.
1. J. E. Ross, D. & O.L.S., Kamloops, B.C.
Surveying Staff, Department of Interior.
1. C. H. C. Wright, B.A.Sc., Toronto, Ont.
Professor of Architecture, University of Toronto.

1889.

1. B. Carey, Toronto, Ont.
1. W. J. Chalmers, Vanport, Beaver Co., Pa.
Asst. Engineer, Ohio River Department for U. S. Government.
1. W. A. Clement, M. Can. Soc. C.E., South Vancouver, B.C.
Municipal Engineer.
1. G. F. Hanning, St. Eustache, Two Mountains, Quebec.
Divisional Engineer, C.N.R.
1. H. E. T. Haultain, C.E., Asso. Mem., I.C.E., M.I.M.M. M. Can. Soc. C.E., Toronto, Ont.
Professor of Mining Engineering, University of Toronto.
1. J. Irvine (deceased).
1. D. D. James, B.A., B.A.Sc., 227 George St., Toronto.
Surveyor.
1. F. X. Mill (deceased).
1. H. K. Moberley, D. & S.L.S., Moosomin, Sask.
District Engineer and Surveyor.
1. T. R. Rosebrugh, M. A., Toronto, Ont.
Professor of Electrical Engineering, University of Toronto.
1. T. Wickett, M.D., 25 Nightingale St., Hamilton, Ont.
Physician.

1890.

5. W. E. Boustead (deceased).
1. F. M. Bowman, O.L.S., C.E., Pittsburgh, Pa.
Blaw Steel Const. Co.
1. M. A. Bucke, M.E. (deceased).
1. G. D. Corrigan (deceased).
1. J. A. Duff, B.A. (deceased).
1. A. B. English (deceased).
1. N. L. Garland, 76 Wellington St. W., Toronto, Ont.
1. J. Hutcheon, O.L.S., Guelph, Ont.
Civil Engineer.
1. W. L. Innes, O.L.S., C.E., Simcoe, Ont.
Manager, Dominion Canners, Ltd.
1. E. B. Merrill, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E. Toronto, Ont.
Consulting Engineer, Toronto General Trusts Building.
1. J. R. Pedder (deceased).
3. R. A. Ross, E.E., 80 St. Francois Xavier St., Montreal, Que.
Consulting Electrical and Mechanical Engineer.
1. T. H. Wiggins, O.L.S., Saskatoon, Sask.
Civil Engineer and Dom. Land Surveyor.
1. W. J. Withrow. Ottawa, Ont.
Patent Examiner, Patent Office.

1891.

1. H. J. Beatty, O.L.S., Pembroke, Ont.
Engineer and Surveyor.
1. T. R. Deacon, O.L.S., M. Can. Soc. C.E., Winnipeg, Man.
President and General Manager, Manitoba Bridge & Iron Works, Ltd.
1. C. W. Dill, M. Can. Soc. C.E., Winnipeg, Man.
General Manager, The National Paving Co.
5. O. S. James, B.A.Sc., 227 George St., Toronto, Ont.
1. A. Lane (deceased).
1. J. E. McAllister, B.A.Sc , C.E., 501 Standard Bank Bldg., Toronto, Ont.
Consulting Engineer.
3. E. B. Merrill, B.A., B.A.Sc., M. Can. Soc. C.E., M. Am. Inst. E.E., Toronto, Ont.
Consulting Engineer, Toronto General Trusts Building.
1. J. E. A. Moore, C.E., Cleveland, O.
Marani & Moore, Consulting, Civil and Mechanical Engineers.
1. W. Newman, O.L.S., A.M., Can. Soc. C.E. Windsor, Ont.
Consulting Engineer.
1. J. K. Robinson (deceased).
1. W. B. Russel, 1307 Traders Bank Bldg., Toronto, Ont.
Civil Engineer and Contractor.
1. G. E. Silvester, O.L.S., M. Am. Inst. M.E., Copper Cliff, Ont.
Chief Engineer, Canadian Copper Co.
1. H. D. Symmes, Niagara Falls S., Ont.
Engineer and Contractor.

1892.

1. J. R. Allan, O.L.S., Renfrew, Ont.
1. T. H. Alison, B.A.Sc., C.E., Bayonne, N.J.
Secretary and Chief Engineer, Bergen Point Iron Works.
1. A. G. Anderson. Port Dover, Ont.
Hardware Merchant.
1. C. Fairchild, D. & O.L.S., 608 Tegler Blk., Edmonton, Alta.
Consulting Engineer and Surveyor.
1. J. B. Goodwin, B.A.Sc., Healey Falls, Ont.
Supt. for Midland Const. Co.
4. C. E. Langley, Continental Life Bldg., Toronto, Ont.
Langley & Howland, Architects.
1. A. T. Laing, B.A.Sc., Toronto, Ont.
Secretary and Assistant Professor, Faculty of Applied Science, University of Toronto.
1. E. J. Laschinger, B.A.Sc., M.E., Johannesburg, Transvaal, S.A.
Mechanical Engineer, H. Eckstein & Co.
5. W. L. Lawson, B.A.Sc., Sterling, Col.
Manager Great Western Sugar Co.
3. W. A. Lee, B.A.Sc. (deceased).
1. B. McEntee, B.A.Sc., 38 Queen St. E., Toronto.
Stationer.
3. C. G. Milne, B.A.Sc. (deceased).
1. Chas. H. Mitchell, B.A.Sc., C.E., Ca. Mn. Soc. C.E., M. Am. Soc. C.E., Lieut.-Col.,
Consulting Hydro-Electric Engineer, Traders Bank Bldg., Toronto.
1. N. L. Playfair, Vancouver, B.C.
1. J. M. Prentice (deceased).
1. J. A. Ross, Cleveland, Ohio.
Designer L. S. & M. S. Railway, Engineering Office.

1892—*Continued.*

1. ALBERT N. SMITH, Youngstown, Ohio.
Engineer, Wm. B. Pollock Co.
1. R. W. THOMSON, B.A.Sc., M.E., 4 Charles St. W., Toronto, Ont.
Mining Engineer.
3. A. V. WHITE, M.E., Ottawa, Ont.
Conservation Commission.

1893.

1. A. G. ARDAGH, Barrie, Ont.
Land Surveyor and Civil Engineer.
4.*H. F. BALLANTYNE, B.A.Sc., 2 West 47th St., New York, N.Y.
Architect.
1. G. L. BROWN, O.L.S., A.M. Can. Soc. C.E., Morrisburg, Ont.
Civil Engineer and Land Surveyor.
1.*L. C. CHARLESWORTH, D.L.S., Edmonton, Alta.
Director of Surveys for Alberta.
1. T. H. DUNN, O.L.S., Ottawa, Ont.
Water Power Branch Dept. of The Interior.
1. J. M. R. FAIRBAIRN, P.L.S., Westmount, Que.
Assistant Chief Engineer, C. P. R.
4.*W. FINGLAND, 334 Portage Ave., Winnipeg, Man.
Architect.
1. C. FORRESTER, Toronto, Ont.
1.*WALTER J. FRANCIS, C.E., M. Can. Soc. C.E., M. Am. Soc. C.E., Montreal, Que.
Walter J. Francis & Co., Consulting Engineers, 232 St. James St.
3.*A. R. GOLDIE, Galt, Ont.
Manager ,Goldie & McCulloch Co.
3. S. C. HANLY, Midland, Ont.
Midland Engine Works Co.
4.*J. KEELE, A.M., B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.
1. J. T. LAIDLAW, B.A.Sc., M.E., Cranbrook, B.C.
Consulting Mining Engineer.
3. F. L. LASH, Bandoeng, Java.
Manager, Electrical Supply Co., Board of Trade Building.
1. A. L. MCALLISTER, B.A.Sc., 501 Standard Bank Bldg., Toronto, Ont.
Consulting Engineer.
1. T. J. MCFARLEN, Port Arthur, Ont.
Chemist, Atikokan Iron Co.
1. A. J. MCPHERSON, B.A.Sc., D.L.S., Regina, Sask.
Deputy Minister of Public Works for Sask.
1. A. F. MACALLUM, B.A.Sc., C.E., Hamilton, Ont.
City Engineer.
1. W. T. MAIN, Wells St. Depot, Chicago, Ill.
Division Engineer, C. & N. W. Ry.
1. V. G. MARANI, C.E., Cleveland, Ohio.
Marani & Moore, Consulting, Civil and Mechanical Engineers.
1. W. MINES, B.A.Sc., Chicago, Ill.
Mechanical Engineer, Hoover & Mason.
3.*J. M. ROBERTSON, Montreal, P.Q.
Consulting Engineer.

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*Diploma with honours.

1893—*Continued.*

1. R. K. RUSSELL. Pembroke, Ont.
Railway Contractor.
1.*F. N. SPELLER, B.A.Sc., Pittsburgh, Pa.
Metallurgical Engineer, National Tube Co.
1. H. R. SQUIRE, B.A.Sc., O.L.S. (deceased).
1. W. V. TAYLOR, O.L.S., A.M. Can. Soc. C.E., Quebec, P.Q.
Quebec Harbour Commissioners.
1.*R. B. WATSON (deceased).

1894.

3.*R. W. ANGUS, B.A.Sc., Toronto, Ont.
Professor of Mechanical Engineering, University of Toronto.
1. H. F. BARKER, Box 31, Halifax, N.S.
1. A. T. BEAUREGARD, B.A.Sc., Verona, N.J.
Laboratory Engineer, Public Service Corporation of New Jersey.
1. A. E. BERGEY, Pittsburgh, Pa.
Assoc. Professor, Carnegie Inst. of Technology.
3. D. G. BOYD, Toronto, Ont.
Department of Lands and Mines, Parliament Buildings.
3. W. A. BUCKE, Toronto, Ont.
District Manager, Canadian General Electric Co.
1. J. CHALMERS, O.L.S., A.M. Can. Soc. C.E., Edmonton, Alta.
City Commissioner, Department of Public Works.
4.*J. A. EWART, B.A.Sc., 193 Sparks St., Ottawa, Ont.
Architect.
3. W. J. HERALD, B.A.Sc., Toronto. Ont.
Engineering Department, Canada Foundry Co.
3. H. E. JOB, B.A.Sc., Hamilton, Ont.
Manufacturer of Electrical Machinery and Apparatus.
3. A. C. JOHNSTON, B.A.Sc., M.E., Philadelphia, Pa.
Vice-President and Chief Engineer, The J. M. Dodge Co.
1. S. M. JOHNSTON, B.A.Sc., B.C.L.S. Greenwood, B.C.
1. J. E. JONES, Engineers' Club, New York, N.Y.
3. N. M. LASH, Montreal, P.Q.
Assistant Electrical Engineer, Bell Telephone Co.
1.*A. L. MCTAGGART, B.A.Sc., 703 Arch St., Pittsburg, Pa.
Mechanical Engineer.
3.*W. MINTY, B.A.Sc., Blackburn, Eng.
With Messrs. Yates & Thom, Ltd., Engineers.
3. C. J. NICHOLSON, Hamilton, Ont.
Assistant Engineer, Toronto, Hamilton & Buffalo Ry.
1. H. ROLPH, Montreal, Que.
Secretary, John S. Metcalf Co., Ltd.
1. J. D. SHIELDS, B.A.Sc., Toronto, Ont.
Sewer Engineer, Staff of City Engineer.
1. ANGUS SMITH, O.L.S., A.M. Can. Soc. C.E., Prince Albert, Sask.
City Engineer.
3. A. K. SPOTTON. Galt, Ont.
Chief Engineer, Goldie & McCulloch Engine Works.
3. R. T. WRIGHT, B.A.Sc., East Pittsburgh, Pa.
Engineering Department, Westinghouse Machine Co.

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*Degree with honours.

1895.

1. J. ARMSTRONG, B.A.Sc., LePas, Man.
Chief Engineer of the Hudson Bay Ry.
3. A. E. BLACKWOOD, 30 Church St., New York.
Manager New York Office, Sullivan Machinery Co.
1. E. J. BOSWELL, D.L.S., Toronto, Ont.
With C. P. R.
3. G. BREBNER (deceased).
3. W. M. BRODIE, B.A.Sc., Pittsburgh, Pa.
With the Green Engineering Co. of Chicago.
3. L. L. BROWN, The Woolworth Bldg., New York.
Vice-President, The Foundation Co.
4. R. J. CAMPBELL, Chicago, Ill.
Artist, Chicago Tribune.
3. A. W. CONNOR, B.A., C.E., 36 Toronto St., Toronto, Ont.
Bowman & Connor, Consulting Engineers.
1. J. S. DOBIE, B.A.Sc., O. & D.L.S., Thessalon, Ont.
President, O. L. S. Assoc.
1. F. W. GUERNSEY, Trail, B.C.
4.*A. H. HARKNESS, B.A.Sc., Toronto, Ont.
Structural Engineer, Confederation Life Building.
3. H. S. HULL, B.A.Sc., Johnstown, Pa.
Structural Drawing, Cambria Steel Co.
3.*J. McGOWAN, B.A., B.A.Sc., Toronto, Ont.
Associate Professor of Applied Mechanics, University of Toronto.
3. W. N. McKAY, Georgetown, Ont.
Manager of Bank of Hamilton.
3. H. L. McKINNON, B.A.Sc., Cleveland, Ohio.
Vice-President of The C. O. Bartlett & Snow Co.
1. W. W. MEADOWS, D. & O.L.S., Maple Creek, Sask.
Department of Public Works.
1. F. J. ROBINSON, D. & O.L.S., Regina, Sask.
Deputy Minister of Public Works, Saskatchewan.
3. F. T. STOCKING, Toronto, Ont.
Hydro-Electric Commission.
3. R. C. C. TREMAINE, B.A.Sc. (deceased).

1896.

2.*J. W. BAIN, B.A.Sc., Toronto, Ont.
Associate Professor of Applied Chemistry, University of Toronto.
2. L. T. BURWASH, Dawson, Y.T.
Mining Recorder.
3.*G. M. CAMPBELL, Riverside, Ill.
Superintendent, Power Apparatus Shops, Western Electric Co.
2. J. A. DECEW, B.A.Sc., 615 Canadian Express Bldg., Montreal, Que.
Chemical Engineer, Pres. Process Engineers Ltd.
3.*H. P. ELLIOTT, B.A.Sc., E.E., Toronto, Ont.
Consulting Electrical Engineer.
3. W. C. GURNEY, Toronto, Ont.
Vice-President, Gurney Foundry Co., Ltd.
3.*H. V. HAIGHT, B.A.Sc., Sherbrooke, P.Q.
Chief Engineer, Canadian Ingersoll Rand Drill Co. Ltd.

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*Diploma with honours.

1896—*Continued.*

1. W. F. Laing (deceased).
3. R. R. Lawrie (deceased).
3. C. MacBeth, B.A.Sc. (deceased).
3. J. A. MacMurchy, Pittsburgh, Pa.
Chief Draftsman, Turbine Department, Westinghouse Machine Co.
1. T. Martin, B.A.Sc., Calgary, Alta.
Assistant Divisional Engineer, C. P. R., Western Division.
3. R. R. Scheibe, Toronto, Ont.
Sales Manager, Brigdens, Ltd.

1897.

2. E. Andrewes, B.Sc., A.M.I.C.E., Portmadoc, N. Wales.
Resident Engineer, Maenofferen Slate Quarry Co., Ltd.
2.*J. A. Bow, Great Falls, Mont.
B. & M. Smelter.
1. H. S. Carpenter, B.A.Sc., O.L.S., Regina, Sask.
Superintendent of Highways, Department of Public Works.
5. H. W. Charlton, B.A.Sc., Ottawa, Ont.
Examiner, Patent Office.
4.*E. A. Forward, A.M. Can. Soc. C.E., Lockport, Man.
Engineer-in-charge, St. Andrew's Lock and Dam.
3.*A. T. Gray, B.A.Sc., Schenectady, N.Y.
Designing Engineer on Steam Turbines, General Electric Co.
3. W. A. B. Hicks, Buffalo, N.Y.
With Lackawanna Steel Co.
4. C. F. King, Toronto, Ont.
Rep. of Mortimer Co. of Ottawa.
1. H. W. Proudfoot (deceased).
2.*A. H. A. Robinson, B.A.Sc., M.A.I. M.E., Haileybury, Ont.
Mine Inspector.
4. W. F. Scott, Toronto, Ont.
Structural Engineer and Consulting Architect.
3.*W. R. Smiley, B.A.Sc., Cleveland, Ohio.
With Wellman-Seaver-Morgan Engineering Co.
2.*W. W. Stull, B.A.Sc., O.L.S., Sudbury, Ont.
Surveyor and Mining Engineer.
1.*M. B. Weekes, B.A.Sc., D.L.S., Regina, Sask
Department of Public Works.
1. E. A. Weldon, Winnipeg, Man.
Investment Broker, 711 McIntyre Block

1898.

1. W. H. Boyd, B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.
2. W. E. H. Carter, B.A.Sc., 83-85 Front Street East, Toronto, Ont.
Consulting Mining Engineer.
3. E. H. Darling, A.M. Can. Soc. C.E., Hamilton, Ont.
Resident Engineer East Hamilton Plant, Hamilton Bridge Works Co.
1. W. F. Grant, B.A.Sc., Sault Ste. Marie, Ont.
City Engineer.

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*Diploma with honours.

1898—*Continued.*

1. J. S. Kormann, B.A.Sc., Toronto, Ont.
Manager, Kormann Brewing, Ltd.
3. J. E. Lavrock, Vancouver, B.C.
Draftsman, Hermon & Burwell.
4. D. MacKintosh, B.A.Sc., B.Arch., New York, N.Y.
Chief Superintendent F. M. Andrews & Co., Metropolitan Tower.
1.*F. W. McNaughton, O.L.S., Winnipeg, Man.
Deputy Minister of Public Works.
1. J. H. Shaw, O.L.S., North Bay, Ont.
Surveyor and Engineer.
3. A. E. Shipley, B.A.Sc., Nelson, B.C.
Manager, Nelson Coke & Gas Co.
3.*F. C. Smallpiece, B.A.Sc., 1233 2nd St. E., Calgary, Alta.
Chief Engineer, General Supplies Co.
1.*R. W. Smith, P.L.S., Revelstoke, B.C.
Surveyor.
1.*J. A. Stewart, M.A., Toronto, Ont.
Chief Engineer, Toronto Structural Steel Co.
1.*H. L. Vercoe, Montreal, Que.
3. T. A. Wilkinson, New York, N.Y.
Statistician, Westinghouse Church Kerr Co.
3. D. A. Williamson, B.A.Sc., Hamilton, Ont.
With Hamilton Bridge Works Co.

1899.

3.*T. Barber, Meaford, Ont.
Hydraulic Engineer, Chas. Barber & Sons.
2. J. T. M. Burnside, B.A.Sc. (deceased).
3. L. B. Chubbuck, B.A.Sc., E.E., Hamilton, Ont.
Engineer, Canadian Westinghouse Co.
2. G. A. Clothier, Rossland, B.C.
Engineer, Le Roy Mining Co.
1. C. Cooper, Koekuk, Iowa.
Koekuk & Hamilton Water Power Co.
2. R. W. Coulthard, B.A.Sc., Blairmore, Alta.
General Manager, West Canadian Collieries, Ltd.
3. J. A. Craig, B.A.Sc., Toronto, Ont.
Office of Willis Chipman, C.E.,
2. J. C. Elliott, Kelso, Ont.
3. W. E. Foreman, B.A.Sc., Pittsburgh, Pa.
Construction Dept., Westinghouse Electric and Mfg. Co.
3. E. Guy, B.A.Sc., Winnipeg, Man.
With Smith, Kerry & Chace.
3.*W. Almon Hare, B.A.Sc., A.M., Can. Soc. C.E., Toronto, Ont.
President, The Hare Engineering Co.
1. R. Latham, B.A.Sc., Hamilton, Ont.
Chief Engineer, T. H. & B. Ry.
3. W. Monds, B.A.Sc., 36 Toronto St., Toronto, Ont.
Clark & Monds, Consulting Engineers.
1. J. Patterson, B.A., Toronto, Ont.
Physicist, Dominion Observatory.

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*Diploma with honours.

1899—*Continued.*

3. A. S. H. Pope, B.A.Sc., Portland, Oregon.
Pope & Wilcox, Electrical and Mechanical Engineers.
2. G. E. Revell, B.A.Sc., Nelson, B.C.
3.*E. Richards, B.A.Sc., Ottawa, Ont.
Customs Appraiser.
3. G. A. Saunders, Toronto, Ont.
Asst. Engineer, Hydro-Electric Commission.
1.*T. Shanks, B.A.Sc., D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1.*D. C. Tennant, B.A.Sc., Lachine Locks, Que.
Chief Draftsman with Dominion Bridge Co.
3. W. W. VanEvery, Sault Ste. Marie, Ont.
City Engineer.
3. W. E. Wagner, B.A.Sc., Toronto, Ont.
Engineer and Contractor.
2. G. H. Watt, D.L.S., Ottawa, Ont.
Dominion Land Surveyor.
3. E. Yeates, Hamilton, Ont.
Manager, Hamilton Branch, Canadian Machinery Corporation.

1900.

1. J. L. Allan, M. Can. Soc. C.E., Dartmouth, N.S.
Office Engineer, Dartmouth Branch Intercolonial Ry.
2. E. G. R. Ardagh, B.A.Sc., Toronto, Ont.
Asst. Professor of Applied Chemistry, University of Toronto.
3. J. A. Bain, Ottawa, Ont.
Structural Engineer, Dept. of Public Works of Canada.
3. J. H. Barley, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Electric and Manufacturing Co.
2.*M. C. Boswell, M.A., Ph.D., Toronto, Ont.
Asst. Professor of Organic Chemistry, University of Toronto.
1. L. T. Bray, D. & O.L.S., Edmonton, Alta.
District Engineer and Surveyor.
3. J. Clark, Pittsburgh, Pa.
Electrician, P. & L. E. R. R.
2. J. E. Davison, B.A.Sc., Fort William.
Engineering Staff, Canadian Northern Ry.
3. E. D. Dickinson, Schenectady, N.Y.
With General Electric Co.
3. G. W. Dickson, B.A.Sc., Grand Mere, Que.
With Laurentide Paper Co.
2.*H. A. Dixon, B.A.Sc., M.L.S., Resplendent, B.C.
District Engineer, Canadian Northern Railway.
2. C. H. Fullerton, O.L.S., New Liskeard, Ont.
Engineer and Surveyor.
3. W. S. Guest, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.
3. W. Hemphill, B.A.Sc., E.E., Buffalo, N.Y.
Superintendent, Cataract Power & Conduit Co.
3. S. E. M. Henderson, Peterboro, Ont.
Canadian General Electric Co.

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*Diploma with honours.

1900—*Continued.*

3. J. A. HENRY, Schenectady, N.Y.
Designing Engineer, General Electric Co.
2. H. S. HOLCROFT, B.A.Sc., D.L.S., 108 St. Vincent St., Toronto, Ont.
Surveyor, Peace River District.
3. H. A. JOHNSON, 148 Clinton St., Toronto, Ont.
Manager, Johnson Oil Engine Co., Ltd.
3. J. C. JOHNSTON, Boston, Mass.
Plant Inspector, Warren Bituminous Paving Co.
2.*J. A. JOHNSTON, B.A.Sc., Ignace, Ont.
Contractor.
2. R. E. McARTHUR, Montreal, Que.
Const. Dept., C. P. R.
2. J. G. McMILLAN, B.A.Sc., Box 431, New Liskeard, Ont.
Mine Inspector.
3. L. HAUN MILLER, Cleveland, Ohio.
Sales Agent, Bethlehem Steel Co.
2. E. V. NEELANDS, B.A.Sc., Cobalt, Ont.
Manager, Cobalt Comet Mines.
1.*E. H. PHILLIPS, D.L.S., Saskatoon, Sask.
Phillips & Phillips, Civil Engineers and Surveyors.
2. J. R. ROAF, B.A.Sc., Bickerdike, Alta.
Yellow Head Pass Coal Co.
3.*C. H. E. ROUNTHWAITE, Sault Ste. Marie, Ont.
Chief Draftsman Algoma Central & Hudson Bay Ry.
2. H. W. SAUNDERS, B.A.Sc., Gary, W.Va.
Division Engineer, U. S. Coal & Coke Co.
1. A. TAYLOR, D.L.S. & M.L.S., Portage la Prairie, Man.
Engineer and Surveyor.
1. W. C. TENNANT, B.A.Sc. (deceased).
2. S. M. THORNE, B.A.Sc., Cobalt, Ont.
Manager, Preston East Dome.
1. F. W. THOROLD, B.A.Sc., 2 Toronto St., Toronto, Ont.
F. W. Thorold Co., Ltd., Consulting Engineers and Contractors.
1. H. M. WEIR, B.A.Sc., Pachuca, Mex.
With Real Del Morte Co.
3. F. D. WITHROW, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.

1901.

1. R. H. BARRETT, B.A.Sc., O.L.S. (deceased).
3. W. G. BEATTY, Fergus, Ont.
Manager, Beatty Bros., Implement Manufacturers.
3. G. M. BERTRAM, Toronto, Ont.
Business Manager, Canadian Courier.
3. W. J. BOWERS (deceased).
3. E. T. J. BRANDON, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Comm.
3. W. P. BRERETON, B.A.Sc., Winnipeg, Man.
Assistant Engineer, Power Construction Dept.
3. J. T. BROUGHTON, Scottdale, Pa.
Chief Engineer, Scottdale Foundry & Machine Co.
3.*W. G. CHACE, B.A.Sc., Winnipeg, Man.
Chief Engineer, Greater Winnipeg Water District.

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*Diploma with honours.

1901—*Continued.*

3. A. G. CHRISTIE, Baltimore, Md
Assoc. Professor of Mechanical Engineering, Johns Hopkins University
3. J. R. COCKBURN, B.A.Sc., A.M. Can. Soc. C.E., Toronto, Ont.
Asst. Professor of Descriptive Geometry, University of Toronto.
1. W. A. DUFF, Moncton, N.B.
Engineer of Bridges, Intercolonial Ry.
2.*D. E. EASON, B.A.Sc., Peterboro', Ont.
Division Engineer, Trent Valley Canal.
1.*S. GAGNE, B.A.Sc. (deceased).
3. N. R. GIBSON, B.A.Sc., Winnipeg, Man.
Assistant Engineer, Power Const. Dept.
2. A. T. E. HAMER, Wahnapitae, Ont.
Engineering Staff, Canadian Northern Ry. Co.
1. C. HARVEY, B.A.Sc., D.L.S., C.E., B.C.L.S. Kelowna, B.C.
Consulting Engineer and Surveyor.
2. F. C. JACKSON, La Tuque, Que.
Jackson & Connelly, Contractors, N. T. C. Ry.
3.*R. A. LAIDLAW, C.E. Houston, Texas.
Engineer and Sales Agent, Trussed Concrete Steel Co.
3. W. C. LUMBERS, Calgary, Alta.
Engineering Staff, C. P. R.
2. A. C. MACDOUGALL, Massena, N.Y.
Assistant Superintendent, Aluminium Co. of America.
3. A. T. C. MCMASTER, B.A.Sc., Toronto, Ont.
Engineer and Contractor.
1. G. MACMILLAN, Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
3.*H. G. MCVEAN, B.A.Sc., Moose Jaw, Sask.
Contractor and Engineer.
2. W. C. MATHESON, Joliette, Que.
With Mackenzie-Mann & Co.
3. H. T. MIDDLETON, Englewood Cliffs, N.J.
2. J. L. R. PARSONS, B.A., D.L.S., Winnipeg, Man.
Engineer and Surveyor.
1. G. H. POWER, Winnipeg, Man.
Western Canada Rep. of Willis Chipman, C.E.
3.*H. W. PRICE, B.A.Sc., Toronto, Ont.
Associate Professor of Electrical Engineering, University of Toronto.
1. H. P. RUST, B.A.Sc., A.M. Can. Soc. C.E., San Francisco, Cal.
Great Western Power Co.
3. M. V. SAUER, B.A.Sc., Niagara Falls, Ont.
Assistant Engineer, Ontario Power Co.
3. W. H. STEVENSON, B.A.Sc., Monadnock Block, Chicago, Ill.
Secretary Power Plant Specialty Co.
1. R. D. WILLSON, (deceased)

1902.

3.*H. G. BARBER, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. W. J. BLAIR, B.A.Sc., D. & O.L.S., Box 643, Woodstock, Ont.
Civil Engineer and Surveyor.

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*Diploma with honours.

1902—*Continued.*

3. J. M. Brown, Pittsburgh, Pa.
With Westinghouse Machine Co., Steam Turbine Dept.
2. W. G. Campbell, Toronto, Ont.
2. A. R. Campbell, (deceased).
3. C. G. Carmichael (deceased).
2.*W. Christie, B.A.Sc., Prince Albert, Sask.
Dominion Land Surveyor.
2. F. T. Conlon (deceased).
3. H. V. Connor, Pittsburgh, Pa.
With Westinghouse Electric and Mfg. Co.
2.*M. T. Culbert (deceased).
2. R. Cumming, 50 Front St. East, Toronto, Ont.
General Contractor.
1. W. E. Douglas, B.A., 152 Bay St., Toronto, Ont.
Contractor,
3.*R. J. Dunlop, Toronto, Ont.
With Canadian Westinghouse Co.
2. W. M. Edwards, B.A.Sc., Lethbridge, Alta.
Duff & Edwards.
3. W. Elwell (deceased).
2. J. M. Empey, B.A.Sc., O.L.S., D.L.S. Calgary, Alta.
District Engineer and Surveyor, Dept. of Public Works.
2.*D. L. H. Forbes, Chuquicamata, Chili, South America.
Chief Const. Engineer, Chili Exploration Co.
1.*A. E. Gibson, B.A.Sc., Toronto, Ont.
Office of Haney & Miller, Engineers and Contractors.
3. A. C. Goodwin, Toronto, Ont.
With Hydro-Electric Power Commission.
3. C. P. Henwood, McKeesport, Pa.
Draftsman, National Tube Co.
3. D. M. Johnston, Toronto, Ont.
With Hydro-Electric Power Comm.
2. R. H. Knight, B.A.Sc., D.L.S., Edmonton, Alta.
Driscoll & Knight, Engineers and Surveyors.
5.*F. L. Langmuir, B.A.Sc., Ph.D., Toronto, Ont.
Chemist, M. Langmuir Mfg. Co.
3. A. H. McBride, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Commission.
1. A. L. McLennan, D.L.S., Toronto, Ont.
Office of York County Engineer.
3. J. T. Mackay, Toronto, Ont.
3. J. F. S. Madden, Winnipeg, Man.
Erecting Engineering Dept., Can. Gen. Electric Co.
3.*C. H. Marrs, Hamilton, Ont.
Hamilton Bridge Works.
3. P. Mathison, B.A.Sc., East Pittsburgh, Pa.
Westinghouse Electric & Manufacturing Co.
3. R. S. Mennie, Pittsburgh, Pa.
With Crucible Steel Co. of America.
2. H. H. Moore, D.L.S., A.M. Can. Soc. C.E., Calgary, Alta.
Dominion Land Surveyor and Engineer.

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*Diploma with honours.

1902—*Continued.*

1.*T. S. NASH, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. G. G. POWELL, B.A.Sc., Toronto, Ont.
Assist. City Engineer.
1.*W. F. RATZ, D.L.S. (deceased).
3. H. D. ROBERTSON, B.A.Sc., Toronto, Ont.
Miller, Cumming & Robertson, Engineers and Contractors.
3.*D. SINCLAIR, B.A.Sc. (deceased).
2.*I. J. STEELE, D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
3. W. H. SUTHERLAND, B.A.Sc., Montreal, Que.
Assistant Chief Engineer, Montreal Water and Power Co.
3.*T. F. TAYLOR, 494 Concord Ave., Toronto, Ont.
2.*C. M. TEASDALE, Concord, Ont.
Surveyor.
3. A. A. WANLESS, Sydney Mines, N.S.
Asst. Engineer and Shop Supt. N. S. S. & C. Co.
3. H. J. ZAHN, B.A.Sc., 235 Calumet St., Detroit, Mich.

1903.

3. H. G. ACRES, Toronto, Ont.
Asst. Engineer, Hydro-Electric Power Commission.
1. J. G. R. ALISON, Pittsburgh, Pa.
With Riter-Conley Mfg. Co.
3.*H. H. ANGUS, B.A.Sc., Toronto, Ont.
Chief Engineer, Canadian Domestic Engineering Co.
3. J. A. BEATTY, Peterboro', Ont.
Morrow & Beatty, Contractors.
3.*J. BRESLOVE, East Pittsburgh, Pa.
Steam Turbine Engineer, Westinghouse Machine Co.
2. J H. BURD, O., D., S. & A. L. S., C.E., Saskatoon, Sask.
Engineer and Surveyor.
1.*E. L. BURGESS, D.L.S., Kamloops, B.C.
Burgess & Taggart, Surveyors and Engineers.
2. N. A. BURWASH, B.A.Sc., Toronto, Ont.
Surveyor, Speight & Van Nostrand.
1. F. F. CLARKE, D. &. O.L.S., A.M. Can. Soc. C.E., Toronto, Ont.
Divisional Engineer, Can. Northern Ry.
2. C. L. COULSON, Welland, Ont.
3.*A. E. DAVISON, B.A.Sc., Toronto, Ont.
Engineering Staff, Hydro-Electric Power Commission.
3. C. J. FENSOM, B.A.Sc., M.E., Hamilton, Ont
Works Engineer, Otis-Fensom Elevator Co
2.*E. O. FUCE, O.L.S., Calgary, Alta.
Fuce & Scott, Consulting Civil Engineers.
3.*F. A. GABY, B.A.Sc., Toronto, Ont.
Chief Engineer, Hydro-Electric Power Commission.
1. J. C. GARDNER, B.A.Sc., Niagara Falls, Ont.
Consulting Engineer.
3. R. E. GEORGE, Dover, N.H.
Electrical and Gas Engineer, The United Gas & Electric Co.

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*Diploma with honours.

1903—*Continued.*

1.*P. GILLESPIE, B.A.Sc., Toronto, Ont.
Associate Professor of Applied Mechanics, University of Toronto.
1. W. A. GOURLAY, Toronto, Ont.
Engineering Staff, C. P. R.
2. J. F. HAMILTON, B.A.Sc., C.E., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.
2. G. S. HANES, B.A.Sc., O.L.S., North Vancouver, B.C.
Mayor.
2. F. Y. HARCOURT, B.A., Port Arthur, Ont.
Engineer, Public Works Dept.
1. L. J. HAYES, Chicago, Ill.
Structural Engineer, Corn Products Refining Co.
1.*F. D. HENDERSON, Secy. Board of Examiners for D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
5.*J. A. HORTON,
3. J. G. JACKSON, 98 Frontenac St., Kingston, Ont.
3. G. K. JOHNSTON, Pefferlaw, Ont.
Merchant.
1. H. JOHNSTON, O.L.S., Berlin, Ont.
City Engineer.
3. A. G. LANG, Toronto, Ont.
Underground Superintendent, Toronto Hydro-Electric System.
1.*A. J. LATORNELL, B.A.Sc., Edmonton, Alta.
City Engineer.
1.*H. J. MCAUSLAN, B.A.Sc., O.L.S., North Bay, Ont.
Staff of T. & N. O. Ry.
3. J. A. MCFARLANE, B.A.Sc., Hamilton, Ont.
Chief Draftsman, Hamilton Bridge Works Co.
1.*A. L. MCNAUGHTON, Prince Rupert, B.C.
With G. T. P. Co.
5.*F. G. MARRIOTT, B.A.Sc., Toronto, Ont.
Chemist and Supt. Asphalt Plant, City Testing Laboratory.
3.*C. A. MAUS, Paris, Ont.
3.*M. L. MILLER, Pittsburgh, Pa.
Draftsman, McClintic-Marshall Construction Co.
3. P. H. MITCHELL, Toronto, Ont.
Consulting Electrical Engineer, Traders Bank Building.
2.*R. H. MONTGOMERY, B.A.Sc., O. and D.L.S., Prince Albert, Sask.
Engineer and Surveyor.
1. F. A. MOORE, Winnipeg, Man.
Engineering Dept. C. N. Ry.
3. E. E. MULLINS, Port Limon, Costa Rica.
Supt. Motive Power, Northern Ry. Co.
3. I. H. NEVITT, B.A.Sc., Toronto, Ont.
Asst. Engineer, Main Drainage Dept., City Hall.
1. E. W. OLIVER, B.A.Sc., C.E., Toronto, Ont.
Assistant to Chief Engineer, Canadian Northern Ry. System.
3. J. P. OLIVER, Arabia, La.
Supt. of Construction, The American Sugar Refining Co.
3. J. D. PACE, B.A.Sc.,
3. B. B. PATTEN, B.A.Sc., St. Catharines, Ont.
Rutherford & Patten, Engineers and Surveyors.

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*Diploma with honours.

1903—*Continued.*

2. D. H. PHILP, Ottawa, Ont.
Georgian Bay Canal Survey.
3.*D. H. PINKNEY, Elyria, O.
National Tube Dept., U. S. Steel Corporation.
2. T. H. PLUNKETT, B.A.Sc., Meaford, Ont.
Dominion Land Surveyor.
1. D. F. ROBERTSON, D.L.S., Ottawa, Ont.
3.*H. M. SCHEIBE, B.A.Sc., 10 Adelaide Rd., Somerville, Mass.
Supt., E. F. Delisle Co.
1.*H. L. SEYMOUR, B.A.Sc., Edmonton, Alta.
Sanders & Seymour, Civil Engineers and Dominion Land Surveyors.
1. J. H. SMITH, D. & O.L.S., 140 Jasper Ave. West, Edmonton, Alta.
Engineer and Surveyor.
3. H. G. SMITH, B.A.Sc. (deceased).
3. S. L. TREES, B.A.Sc., Whitby, Ont.
Manager, Samuel Trees & Co.
2. J. E. UMBACH, Victoria, B.C.
Chief Draftsman, Lands Dept., Department of the Interior.
1. J. WALDRON, D.L.S., Moose Jaw, Sask.
Engineer and Surveyor.
3.*S. B. WASS, Fredericton, N.B.
Supt. St. John & Quebec R.R.
3. J. A. WHELIHAN, Box 165, Regina, Sask.
3. H. F. WHITE, London, Ont.
Assistant Superintendent, The Geo. White & Sons. Co., Ltd.
[illegible].*C. G. WILLIAMS, B.A.Sc., Porcupine, Ont.
Hollinger Mine.
1.*N. D. WILSON, B.A.Sc., Toronto. Ont.
Toronto Harbour Commission.
1.*C. R. YOUNG, B.A.Sc., Mem. Can. Soc. C.E., Toronto, Ont.
Asst. Professor in Structural Engineering, University of Toronto.

1904.

3.*J. H. ALEXANDER, B.A., C.E., A. M. Am. Soc. C.E.,
Engineer and Contractor. Winnipeg, Man.
3.*J. H. BARRETT, Toronto, Ont.
With the Wm. Davies Co., Ltd.
3. M. B. BONNELL, Ottawa, Ont.
Dept. of Agriculture.
3. T. D. BROWN, B.A.Sc., Calgary, Alta.
Canadian Fairbanks Co.
1. R. J. BURLEY, Ottawa, Ont.
Dept. of the Interior.
3. F. W. BURNHAM, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. J. W. CALDER, B.A.Sc., Fort William, Ont.
With Hydro-Electric Commission.
1. N. C. CAMERON, 4172 Dorchester St., Montreal, Que.
Dominion Engineering and Construction Co.
1. A. J. CAMPBELL, B.A.Sc., Collingwood, Ont.
3.*A. M. CAMPBELL, B.A.Sc., Chilliwack, B.C.
4. J. B. CHALLIES, Ottawa, Ont.
Supt., Water Power Branch, Department of the Interior.
2. C. A. CHILVER, Walkerton, Ont.

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*Diploma with honours.

1904—*Continued.*

2. H. L. Chilver, Windsor, Ont.
Assistant City Engineer.
1. U. W. Christie, B.A.Sc., O.L.S., Ottawa, Ont.
Astronomical Surveys Branch, Dept. of the Interior.
2. P. C. Coates, B.A.Sc., Victoria, B.C.
D. and B. C. Land Surveyor.
1. S. B. Code, O.L.S., Smith's Falls, Ont.
Civil Engineer and Land Surveyor.
1.*T. F. Code, B.A.Sc. (deceased).
1.*W. A. Cowan, Brownville Jct., Maine
Resident Engineer, C. P. R.
3.*S. E. Craig, B.A.Sc., Snelgrove, Ont.
1.*S. R. Crerar, B.A.Sc., O.L.S., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
3. W. M. Currie, Hamilton, Ont.
Managing Director, Canada Steel Co., Ltd.
3. H. H. Depew, Fernie, B.C.
Supt. Crow's Nest Pass Electric Light and Power Co.
2. A. J. Elder, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
2. J. G. Fleck, Vancouver, B.C.
Fleck Bros., Ltd.
1.*A. L. Ford, B.A.Sc., Prince Rupert, B.C.
Government Inspector, Dept. of Railways and Canals.
3. W. S. Gibson, B.A.Sc., 38 Park Rd., Toronto, Ont.
1. J. N. Goodall, Toronto, Ont.
Engineer, Niagara and Ontario Construction Co.
1. J. P. Gordon, Box 266, Dauphin, Man.
Engineering Staff, Willis Chipman, C.E.
3. W. W. Gray, B.A.Sc., Edmonton, Alta.
Engineer, Edmonton Light and Power Co.
1. A. Gray, B.A.Sc., Port Credit, Ont.
With St. Lawrence Starch Co.
3. W. K. Greenwood, B.A.Sc., Orillia, Ont.
Town Engineer.
1. L. D. Hara, St. Catharines, Ont.
Assistant Engineer, Welland Canal Co.
3. C. J. Harris, B.A.Sc., Brantford, Ont.
With Brantford Screw Co.
1. J. B. Heron, B.A.Sc., Toronto, Ont.
c.o. *S. H. Sykes, 1577 Danforth Ave.*
1. E. M. M. Hill, Edmonton, Alta.
Engineering Dept. Canadian Northern Railway.
2. S. N. Hill, 325 Waverly St., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
2. C. J. Ingles, Niagara Falls, Ont.
With Ontario Power Co.
1. E. A. James, B.A.Sc., Toronto, Ont.
Engineer, York County Highway Commission.
1. P. V. Jermyn, B.A.Sc., 118 King St. West, Toronto, Ont.
C. P. R. Construction Department.
3. W. S. H. Keefe, Fort Covington, N.Y.
Manager, Light, Heat and Power Co.
3. W. J. Larkworthy (deceased).

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*Diploma with honours.

1904—*Continued.*

3. O. B. McCuaig, B.A.Sc., Wenatchee, Wash.
General Supt., Wenatchee Valley Gas and Electric Co.
1. G. G. McEwen, B.A.Sc., Winchester, Ont.
Office of T. H. Dunn, O.L.S.
1.*W. G. McFarlane, B.A., B.A.Sc., 55 Elliott St., Toronto, Ont.
Engineer and Surveyor, Peace River Dist.
3.*C. P. McGibbon, B.A., Hamilton, Ont.
Canadian Westinghouse Co.
3. C. McKay, B.A.Sc. (deceased).
1. D. McMillan, Edmonton, Alta.
With C.N.R.
3. G. J. Manson, Penetang, Ont.
Engineer, Grenville Board Co.
1.*W. N. Moorhouse, Toronto, Ont.
Office of Sproatt & Rolph, Architects.
3. E. E. Moore, Glen Falls, N.Y.
Engineer, Inter-State Iron Co.
3. W. H. Munro, Peterboro, Ont.
With Peterborough Radial Ry.
3. G. Pace, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. W. S. Pardoe, B.A.Sc., Philadelphia, Pa.
Asst. Prof. in Civil Engineering, University of Pennsylvania.
3. J. Paris, La Tuque, Que.
Resident Engineer, Transcontinental Ry.
1. J. Parke, B.A.Sc., Havilah, Ont.
Chemist and Assayer.
3. W. J. Peaker, Ottawa, Ont.
Topographical Surveys Branch, Dept. of the Interior.
3.* A. E. Pickering, Sault Ste. Marie, Ont.
Manager, Tagona Light and Power Co.
1. D. L. C. Raymond, B.A.Sc., Toronto, Ont.
The Bishop Construction Co., Ltd.
1. F. B. Reid, B.A.Sc., Ottawa, Ont.
Astronomical Surveys Branch, Dept. of the Interior.
3.*M. R. Riddell, B.A.Sc., 86 Spadina Rd., Toronto, Ont.
1. L. H. Robinson, Sioux Lookout, Ont.
T. and N.O. Ry.
3. G. S. Roxburgh, B.A.Sc., Winnipeg, Man.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
2. F. N. Rutherford, B.A.Sc., St. Catharines, Ont.
Rutherford and Patten, Surveyors and Engineers.
1.*J. D. Sheply, B.A.Sc., D.L.S. N. Battleford, Sask.
District Surveyor and Engineer.
3. F. W. Slater, B.A.Sc., Schenectady, N.Y.
With General Electric Co.
3.*R. S. Smart, Ottawa, Ont.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. D. A. Smith, B.A.Sc., D. & S. L. S., Regina, Sask.
Smith & Phillips, Civil Engineers.
3. W. J. Smither, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
3. S. E. Thomson, B.A.Sc., Niagara Falls, Ont.
Engineering Staff, Electrical Development Co.

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*Diploma with honours.

1904—*Continued.*

3. C. J. Townsend, B.A.Sc., 79 Spadina Ave., Toronto, Ont.
Wilson, Townsend & Saunders.
1. D. T. Townsend, B.A.Sc., O.L.S., Calgary, Alta.
Chief Surveyor, Dept. of Natural Resources, C.P.R.
1. A. V. Trimble, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.
3. B. B. Tucker, B.A.Sc., Morrisburg, Ont.
Resident Engineer, New York and Ontario Power Co.
2.*E. Wade, B.A., Welland, Ont.
Builder.
1.*E. W. Walker, B.A.Sc. (deceased).
3. J. P. Watson, B.A.Sc., Montreal, Que.
With the St. Lawrence Bridge Co. Ltd.
1. J. M. Weir, Toronto, Ont.
Sec.-Treasurer, The Toronto Plate Glass Importing Co., Ltd.
1.*A. F. Wells, O.L.S., B.A.Sc., Toronto, Ont.
Wells & Gray, Ltd., Engineers and Contractors.
1. W. R. Worthington, B.A.Sc., Toronto, Ont.
Assistant Sewer Engineer, Staff of City Engineer.
3. W. F. Wright, Toronto, Ont.
Manager, Motor Sales Dept., Canadian General Electric Co.

1905.

2. H. W. Arens (deceased).
3. R. H. Armour, 165 Broadway, New York.
Westinghouse Electric & Manufacturing Co.
3.*C. B. Aylesworth, Hamilton, Ont.
Draftsman, Canadian Westinghouse Co.
1.*W. Barber, B.A.Sc., Toronto, Ont.
Engineer, Waterworks Department, City Hall.
2.*W. A. Begg, B.A.Sc., Regina, Sask.
Department of Public Works.
3.*G. G. Bell, 5 Walker St., Portland, Maine.
1. J. C. Boeckh, Toronto, Ont.
With Boeckh Brush Co.
3. W. M. Bristol, Halifax, N.S.
Canadian Westinghouse Co.
2. W. C. Campbell, Keene, Ont.
Mining Engineer.
3. W. R. Carson, Cleveland, O.
Engineering Dept., Grasselli Chemical Co.
1. A. V. Chase, Ottawa, Ont.
Dept. of the Interior.
3. S. R. A. Clement, Toronto, Ont.
With Hydro-Electric Power Commission.
3. T. E. Corrigan, Bodie, Cal.
Chief Electrician, Standard Consolidated Mining Co.
1.*N. L. R. Crosby, B.A.Sc., Toronto, Ont.
Contracting Engineer, Toronto Structural Steel Co.
1. G. H. Ferguson, B.A.Sc., Ottawa, Ont.
Assistant Engineer, Commission of Conservation.
3. H. S. Fierheller, B.A.Sc. (deceased).

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*Diploma with honours.

1905—*Continued.*

3. F. H. HARRISON, 320 Fifth Ave., New York, N.Y.
Engineer, H. D. Best Co.
1. M. C. HENDRY, B.A.Sc., Toronto, Ont.
2. C. S. L. HERTZBERG, Toronto, Ont.
James, Loudon & Hertzberg.
3.*W. G. HEWSON, B.A.Sc., Niagara Falls, Ont.
1. G. S. JONES, Smith's Falls, Ont.
3.*G. KRIBS, Dallas, Texas.
Texas Power and Light Co.
2. P. A. LAING, Cochrane, Ont.
Resident Engineer, T. C. Ry.
1. A. LATORNELL, B.A.Sc., Toronto, Ont.
Sewer Department, City Hall.
3. J. W. LEIGHTON, Toronto, Ont.
President, Leighton-Jackes Mfg. Co.
1.*T. R. LOUDON, B.A.Sc., Toronto, Ont.
Asst. Professor of Metallurgy, University of Toronto.
3. S. E. MCGORMAN, Walkerville, Ont.
Asst. Engineer, Canadian Bridge Co.
1.*W. W. MCGREGOR (deceased).
2. D. W. MCKENZIE, Winnipeg, Man.
Draftsman, Engineering Dept. C.N. Ry.
3.*C. A. MCLEAN. Toronto, Ont.
Canadian Westinghouse Co.
2. W. N. MCLEAN, Erin, Ont.
3. F. G. MACE, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.
3. R. W. MOFFATT, B.A.Sc., Winnipeg, Man.
University of Manitoba.
3. L. W. MORDEN, Toronto, Ont.
Canadian Westinghouse Co.
3. G. R. MUNRO, B.A.Sc., 405 Dorchester St. W., Montreal, Que.
Assistant to R. S. Lea.
3.*W. G. NICKLIN, B.A.Sc., Grand Rapids, Mich.
Assistant Superintendent, Dalnu & Kiefer Tanning Co.
1. E. D. O'BRIEN, Nipigon, Ont.
With Transcontinental Ry.
1.*B. B. PATTEN, B.A.Sc., St. Catharines, Ont.
Rutherford & Patten, Surveyors and Engineers.
1. E. P. A. PHILLIPS, B.A.Sc., O.L.S., Port Arthur, Ont.
City Engineer's Dept.
1. W. B. PORTE, Oakville, Ont.
2. E. F. PULLEN, Iroquois Falls, Ont.
Manager, Alexo Mine.
2. G. L. RAMSEY, B.A.Sc., Sault Ste. Marie, Ont.
Ontario Land Surveyor.
1. G. W. RAYNER, Havelock, Ont.
Ontario Rock Co.
3.*R. B. ROSS (deceased).
5. T. E. ROTHWELL, B.A.Sc., Toronto, Ont.
Provincial Assay Office.
2.*G. S. SCOTT, 26 Howard St., Toronto, Ont.
3. H. V. SERSON, New York, N.Y.
Engineer, Snare & Triest Co., Limited.
3. C. H. SHIRRIFF, B.A.Sc., Toronto, Ont.
Chemist, Imperial Extract Co.

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*Diploma with honours.

1905—*Continued.*

3.*C. E. Sisson, Peterboro', Ont.
Canadian Gen. Electric Co.
1. D. L. N. Stewart, B.A.Sc., Fort Frances, Ont.
Road Engineer, Ont. Government.
1. M. A. Stewart, Toronto, Ont.
Assistant Engineer, Roadway Dept., City Hall.
3.*W. F. Stubbs, Galt, Ont.
Assistant Engineer, Goldie & McCulloch Co.
1. N. H. Sturdy, Youngstown, O.
Trussed Concrete Steel Co.
1. W. G. Swan, B.A.Sc., Duncan's, Vancouver Island, B.C.
With the Artillery.
1.*F. H. Sykes, O.L.S., D.L.S., Toronto, Ont.
City Architect's Dept., City Hall.
3. L. R. Thomson, B.A.Sc., Montreal, Que.
With Dominion Bridge Co.
3. E. D. Tillson, B.A.Sc., Hotel Albert, New York, N.Y.
1.*J. J. Traill, B.A.Sc., Toronto, Ont.
Lecturer in Mechanical Engineering, University of Toronto.
1.*W. M. Treadgold, B.A., Toronto, Ont.
Asst. Professor in Surveying, University of Toronto.
3. W. E. Turner, B.A.Sc., Salt Lake City, Utah.
With Utah Light & Ry. Co.
3. A. E. Uren, Toronto, Ont.
Editor, Acton Publishing Co.
3. J. M. Vaughan. 58 Melville Ave., Toronto, Ont.
Contractor.
1. H. L. Wagner, B.A.Sc., Toronto, Ont.
Chief Draftsman, Toronto Structural Steel Co., Ltd.
2. W. H. Young, B.A.Sc., D.L.S., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.

1906.

1. F. Alport, B.A.Sc., D.L.S.
3.*W. L. Amos, Guelph, Ont.
Hydro-Electric Power Commission.
1. A. H. Arens, Inverness, N.S.
Resident Engineer, Inverness Ry, & Coal Co.
3.*J. C. Armer, B.A.Sc., Toronto, Ont.
Secretary Treasurer Commercial Press, and Manager of the Canadian Manufacturer Publishing Co., Ltd.
1. M. H. Baker, B.A.Sc., St. Thomas, Ont.
City Engineer.
3. F. W. Baldwin, Hammondsport, N.Y.
With Graham Bell, Esq.
2. E. W. Banting, B.A.Sc., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
3. F. Barber, B.A., 57 Adelaide St. East, Toronto, Ont.
York County Engineer.
2. M. Bates, B.A.Sc. (deceased).
2. J. P. Bellisle (deceased).
3.*H. H. Betts, B.A.Sc., Rio de Janeiro, Braz
Rio de Janeiro Tramway, Light & Power Co.

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*Diploma with honours.

1906—*Continued.*

5.*D. E. BEYNON, B.A.Sc., Toronto, Ont.
General Supt., Dunlop Tire and Rubber Goods Co.

2. G. W. BISSETT, Naughton, Ont.
Mill Supt., Canadian Exploration Co., Ltd.

3. W. C. BLACKWOOD, B.A.Sc., Toronto, Ont.
Instructor, Technical High School.

3. H. E. BRANDON, B.A.Sc., Winnipeg, Man.
Chief Engineer, Vulcan Iron Works.

1. M. E. BRIAN, B.A.Sc., O.L.S., A.M. Can. Soc. C.E., Windsor, Ont.
City Engineer.

2. F. C. BROADFOOT, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.

2. T. W. BROWN, B.A.Sc., D., S. & A.L.S., A.M. Can. Soc., C.E., Saskatoon, Sask.
Brown & Loucks, Civil Engineers.

1.*A. E. K. BUNNELL, B.A.Sc., Brantford, Ont.
Engineer, Lake Erie and Northern R.R.

3. F. M. BYAM, Toronto, Ont.
Chief Engineer, McGregor and McIntyre.

3. A. CAMERON, Winnipeg, Man.
With the Vulcan Iron Works.

3. A. W. CAMPBELL, B.A.Sc., Toronto, Ont.
Inspector, Hydro-Electric Power Commission.

1. M. J. CARROLL, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.

3.*R. E. C. CHADWICK, Montreal, Que.
Manager, The Foundation Co., Ltd., of New York.

1.*G. T. CLARK, B.A., Saskatoon, Sask.
City Engineer.

3.*G. A. COLHOUN, Hamilton, Ont.
Draftsman, The Hamilton Bridge Works Co., Ltd.

1.*W. A. M. COOK, B.A.Sc., Toronto, Ont.
Staff of City Architect, City Hall.

1.*E. L. COUSINS, B.A.Sc., Toronto, Ont.
Engineer, Harbour Commission.

4. A. G. CREIGHTON, Prince Albert, Sask.
Creighton & Strothers, Architects and Structural Engineers.

4. W. N. DANIELS, 1215 Filbert St., Philadelphia, Pa.
With John. R. Wiggins & Co.

3.*N. P. F. DEATH, B.A.Sc., 25 Jarvis St., Toronto, Ont.
Death & Watson, Electrical Engineers and Contractors.

3. C. S. DUNDASS, B.A.Sc., Lachine, Que.
With Dominion Bridge Co.

3. S. L. FEAR, Amherstburg, Ont.
With Dunbar, Sullivan Dredging Co.

5.*C. C. FORWARD, Ottawa, Ont.
Laboratory of the Inland Revenue Department.

5. C. W. GRAHAM, B.A.Sc., Toronto, Ont.
Fellow in Chemistry, University of Toronto.

1.*P. W. GREENE, Ottawa, Ont.
Canadian Allis-Chalmers Co.

3. C. B. HAMILTON, B.A.Sc., Toronto, Ont.
Manager, Hamilton Gear and Machinery Co.

1.*A. L. HARKNESS, B.A.Sc., Montreal, Que.
St. Lawrence Bridge Co., Ltd.

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*Diploma with honours.

1906—*Continued.*

1.*R. L. HARRISON, Cobourg, Ont.
Resident Engineer, Canadian Northern Ry.
1. E. HARRISON, B.A.Sc., Calgary, Alta.
Harrison & Ponton, Civil and Mining Engineers.
3. J. C. HARTNEY, B.A.Sc., Vancouver, B.C.
Engineer & Salesman, Canadian Westinghouse Co.
1. S. HETT, B.A.Sc., LePas, Man.
Locating Engineer of the Hudson Bay Ry.
3. C. R. HILLIS, Toronto, Ont.
With Toronto & Niagara Power Co.
3. C. W. HOOKWAY, B.A.Sc., Winnipeg, Man.
Allis-Chalmers-Bullock Co.
3. R. H. HOPKINS, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.
1.*R. S. HOUSTON, Winnipeg, Man.
With the Vulcan Iron Works.
2.*W. HUBER, Toronto, Ont.
With York County Highway Commission.
3.*A. H. HULL, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
3. W. C. JEPSON, Niagara Falls, Ont.
Welland Canal Office.
1.*C. JOHNSTON, B.A.Sc., Toronto, Ont.
District Engineer, Canadian Northern Ry.
1. G. R. JONES, B.A.Sc., China.
Missionary.
3. T. JONES, B.A.Sc., Toronto, Ont.
Engineer, Canadian Brake Shoe Co.
1.*A. E. JUPP, B.A.Sc., 165 Bolton Ave., Toronto, Ont.
3. J. D. KEPPY, 50 Pearl St., Toronto, Ont.
Mechanical Engineer.
1. J. L. LANG, B.A.Sc., D. & O.L.S., Sault Ste. Marie, Ont.
Lang & Keys, Engineers and Surveyors.
3. A. P. LINTON, B.A.Sc., Regina, Sask.
Dept. Public Works.
4.*A. WELLESLEY MCCONNELL, B.A.Sc., Toronto, Ont.
Assistant Professor of Architecture, University of Toronto.
3.*D. G. MCILWRAITH, Galt, Ont.
Draftsman, The Goldie & McCulloch Co., Ltd.
2. J. A. MCKENZIE, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.
1.*J. V. MCNAB, Moose Jaw, Sask.
Resident Engineer, C.P.R.
3. J. A. MCPHERSON, Toronto, Ont.
2. K. A. MACKENZIE, B.A.Sc., Ft. George, B.C.
K. A. MacKenzie & Co., Ltd.
1. W. C. MACKINNON, Lachine, P.Q.
Dominion Bridge Co.
3.*W. MACLACHLAN, B.A.Sc., Belleville, Ont.
Local Manager, Trenton Electric and Water Co.
3.*D. W. MARRS, Pittsburgh, Pa.
Designer and Estimator, Riter-Conley Mfg, Co.

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*Diploma with honours.

1906—*Continued.*

3. W. A. Maxwell, Winnipeg, Man.
Dominion Bridge Co.
1.*Rev. J. Mellon Menzies, B.A.Sc., D.L.S., Wu An Hsien, North Honan, China.
Missionary.
3. L. R. Miller, B.A.Sc., Watrous, Sask.
Supt., Electric Light, Power and Traction Co
1.*B. F. Mitchell, B.A.Sc., Edmonton, Alta.
Municipal Engineer.
1. F. F. Montague, 506 Union Bank Bldg., Winnipeg, Man.
1.*W. J. Moore, O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.
1. C. R. Murdock, B.A.Sc., Winnipeg, Man.
Resident Engineer, Chipman and Power.
2. C. J. Murphy, B.A.Sc., Fernie, B.C.
Chief Engineer, Crow's Nest Pass Coal Co.
1.*W. P. Near, B.A., B.A.Sc., St. Catharines, Ont.
City Engineer.
2. R. Neelands, Port Hammond, B.C.
3. D. G. Park, B.A.Sc., 92 Arlington St., Winnipeg, Man.
Engineer, Waldron Co., Ltd., Heating Engineers.
3. G. W. Paterson, Vancouver, B.C.
Salesman, Canadian Financiers, Ltd.
5. R. E. Pettingill, Port Colborne, Ont.
Chief Chemist, Canada Cement Co.
2.*R. C. Purser, B.A.Sc., Windsor, Ont.
3. N. R. Robertson, B.A.Sc., England.
First Canadian Contingent, Expeditionary Force.
1. J. O. Roddick, B.A.Sc., Toronto, Ont.
Assistant Engineer, Dept. of Public Works of Canada.
1. C. H. Rogers, B.A.Sc., Peterboro', Ont.
Peterboro' Canoe Co.
2.*O. Rolfson, B.A.Sc., D.L.S., O.L.S., Box 378, Walkerville, Ont.
1. R. C. Ross, B.A.Sc., Ottawa, Ont.
Department of the Interior.
1. K. G. Ross, Sault Ste. Marie, Ont.
Lang & Ross, Engineers and Surveyors.
1.*H. T. Routly, O.L.S., D.L.S., Haileybury, Ont.
Routly & Summers, Engineers and Surveyors.
2. J. H. Ryckman, Toronto, Ont.
Railway and Bridge Dept., City Hall.
3.*W. K. Sanders, 58 Webster St., West Newton, Mass.
1.*W. A. Scott, B.A.Sc., D.L.S., Galt, Ont.
Dominion Land Surveyor.
1.*W. M. Stewart, B.A.Sc., Saskatoon, Sask.
Phillips, Stewart & Lee.
2. J. E. Thomson, B.A.Sc., W. Virginia, U.S.A.
With Sterling Coal Co.
3.*C. L. Vickery, 85 Barlow St., Fall River, Mass.
Chief Engineer, American Thread Co.
5. W. E. Wickett (deceased).
3.*J. N. Wilson, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Comm.
3.*E. M. Wood, B.A.Sc., 136 Lee Ave., Toronto, Ont.
Engineering Dept., Canadian General Electric Co., Ltd.

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*Diploma with honours.

1907.

3.*F. G. Allen, B.A.Sc., Hyde Park, Mass.
Assistant to Chief Engineer, B. F. Sturtevant Co.
1. F. J. Anderson, B.A.Sc., Niagara Falls, Ont.
1. A. P. Augustine, Vancouver, B.C.
B.C. Land Surveyor.
3.* H. D. Bowman, B.A.Sc., 509 Ontario St., London, Ont.
3. W. S. Brady, B.A.Sc., 579 Euclid Ave., Toronto, Ont.
1. G. H. Broughton, Penticton, B.C.
Manager, People's Trust Co.
1. J. A. Brown, B.A.Sc., Porcupine, Ont.
With Routly & Summers.
1. C. E. Bush, B.A.Sc., England.
With First Canadian Contingent.
3. J. H. Caster, Toronto, Ont.
Toronto Hydro-Electric System.
1.*E. Cavell, Toronto, Ont.
1.*C. B. B. Connell, Glasgow, Scotland.
With Mirrless & Watson.
3.*G. C. Cowper, B.A.Sc., Welland, Ont.
Topographical Surveys in Sask.
2. J. V. Culbert, B.A.Sc., Cobalt, Ont.
Buffalo Mines
3.*R. S. Davis, B.A.Sc., Calgary, Alta.
Sales Engineer, Canadian Westinghouse Co.
3. S. D. Evans, B.A.Sc., Leamington, Ont.
3.*F. R. Ewart, B.A.Sc., 44 Sussex Ave., Toronto, Ont.
Toronto Hydro-Electric System.
1. G. R. S. Fleming, Toronto, Ont.
With the Atwell Fleming Printing Co.
6. P. C. Fux, B.A.Sc., Brantford, Ont.
With Waterous Engine Works Co.
1. J. S. Galletly, B.A.Sc., Brooklin, Ont.
2. G. Galt, B.A.Sc., Cobalt, Ont.
Mine Supt., Cobalt Comet Mine.
1. A. B. Garrow, B.A.Sc., Toronto, Ont.
Assistant Engineer, Main Drainage Dept., City Hall.
1. A. Gillies, B.A.Sc., 25 Rathnally Ave., Toronto.
1. G. W. Graham, Eugenia, Ont.
3. C. S. Grasett, B.A.Sc., 8 Harbord St., Toronto, Ont.
1.*R. E. W. Hagarty, B.A.Sc., Calgary, Alta.
Trussed Concrete Steel Co.
3. K. Hall, B.A.Sc., Edmonton, Alta.
Asst. Engineer, C.P.R.
1. C. T. Hamilton, B.A.Sc., Niagara Falls, Ont.
With Ontario Power Co.
3. R. A. Hare, St. Catharines, Ont.
With Canadian Crocker Wheeler Co.
1. H. F. H. Hertzberg, England.
With First Canadian Contingent, Expeditionary Force.
3.*H. O. Hill, B.A.Sc., Pittsburgh, Pa.
With Riter-Conley Mfg. Co.
1.*T. H. Hogg, B.A.Sc., Toronto, Ont.
Asst. Engineer, Hydro-Electric Power Comm.
3.*C. H. Hutton, B.A.Sc., Hamilton, Ont.
Engineering Staff, Dominion Power Co.

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*Diploma with honours.

1907—*Continued.*

1. H. M. HYLAND, B.A.Sc., 75 St. Mary St., Toronto, Ont.
3. E. W. HYMAN, B.A.Sc., London, Ont.
Assistant Superintendent, London Electric Co.
3.*L. G. IRELAND, B.A.Sc., Brantford, Ont.
Supt. Hydro-Electric System.
1.*W. JACKSON, B.A.Sc., Niagara Falls, Ont.
Field Engineer, Ontario Power Co.
4.*C. B. JACKSON, Kenilworth, Ill.
Estimating Department, C. Everett Clark Co.
3.*E. W. KAY, B.A.Sc., Winnipeg, Man.
Asst. Manager, Reinforced Brickwork Co., Ltd.
3. D. F. KEITH, Toronto, Ont.
Secretary, Keiths Limited.
1. H. P. KEITH, Edmonton, Alta.
Smith & Keith, Alta. Land Surveyors and Engineers.
1. A. A. KINGHORN, B.A.Sc., Toronto, Ont.
Manager. Asphaltic Concrete Co. of Toronto, Ltd.
1. L. W. KLINGNER, Smith's Falls, Ont.
Resident Engineer, C.P.R.
1.*F. C. LAMB, B.A.Sc., North Battleford, Sask.
Department of Public Works.
3. A. D. LEPAN, B.A.Sc., Toronto, Ont.
Assistant Superintendent of Buildings and Grounds, University of Toronto.
1. J. H. LINDSAY, S. & D. L. S., Prince Albert, Sask.
Dist. Surveyor and Engineer, Public Works Dept.
3. J. A. D. MCCURDY, Hammondsport, N.Y.
With Graham Bell, Esq.
1.*J. B. MCFARLANE, B.A.Sc., 60 Lonsdale Rd., Toronto, Ont.
Dominion Land Surveyor.
3.*D. J. MCGUGAN, B.A.Sc., New Westminster, B.C.
Burnett & McGugan.
3. A. H. MCINTOSH, Chicago, Ill.
With Illinois Steel Co.
3. F. W. MCNEILL, B.A.Sc., Peterboro', Ont.
Canadian General Electric Co.
1.*M. K. MCQUARRIE, Revelstoke, B.C.
Resident Engineer, C.P. Ry. Co.
1.*G. MACLEOD, Montreal, P.Q.
1. A. G. MACKAY, New York, N.Y.
With Hudson & Manhattan Ry. Co.
1. W. S. MALCOLMSON, B.A.Sc., 163 Havelock Street, Toronto, Ont.
Engineer and Surveyor.
3. S. A. MARSHALL, Snelgrove, Ont.
6. D. H. C. MASON, B.A.Sc., Toronto, Ont.
Akers, Mason & Bonnington, Chemical Engineers.
1. J. W. MELSON, B.A.Sc., Toronto, Ont.
Fellow in Surveying, University of Toronto.
1. G. G. MILLS, B.A.Sc., 89 Glen Rd., Toronto, Ont.
Mills Bros.
3. J. B. MINNS, B.A.Sc., Winnipeg, Man.
Sales Engineer, Canadian General Electric Co.
4.*G. N. MOLESWORTH, 2 College St., Toronto, Ont.
Architect.

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*Diploma with honours.

1907—*Continued.*

1. J. M. MOORE, B.A.Sc., *With McClary Mfg. Co.*	London, Ont.
5.*P. F. MORLEY, *Meteorological Office.*	Toronto, Ont.
1. E. W. MURRAY, B.A.Sc., *Dept. of Public Works.*	Regina, Sask.
3. J. D. MURRAY. *With Fetherstonhaugh & Co., Patent Solicitors and Engineers.*	Toronto, Ont.
1. E. W. NEELANDS, B.A.Sc., *Sutcliffe & Neelands, Consulting Engineers.*	New Liskeard, Ont.
1. R. E. K. NEELANDS, B.A.Sc.,	Brampton, Ont.
2.*B. NEILLY, B.A.Sc., *Manager, Penn-Canadian Mines.*	Cobalt, Ont.
1. A. E. NOURSE, B.A.Sc.,	Toronto, Ont.
3. J. J. O'SULLIVAN, *With Canada Railway News Co.*	Toronto, Ont.
2. T. K. PATON, *Mining Engineer.*	Wardner, Ida.
1. F. W. PAULIN, O.L.S., *Civil Engineer.*	Niagara Falls, Ont.
1. R. B. POTTER, B.A.Sc., *Asst. Engineer, Roadways Dept., City Hall.*	Toronto, Ont.
3.*F. E. PROCHNOW, B.A.Sc., *With Wilhelm, Parker & Ward, Patent Attorneys.*	Buffalo, N.Y.
3.*J. F. PROCUNIER,	Bayham, Ont.
3. G. E. QUANCE, B.A.Sc., *Secy.-Treas. of the Delhi Light & Power Co., Ltd.*	Delhi, Ont.
3.*H. RAINE, *With Prack & Perrine, Architects and Engineers.*	Toronto, Ont.
1.*J. L. RANNIE, B.A.Sc., *Observer, Geodetic Survey.*	Ottawa, Ont.
3. C. W. B. RICHARDSON, B.A.Sc., *Dominion Bridge Co.*	Montreal, Que.
1. A. A. RIDLER, *Supt. Constructing & Paving Co., Ltd.*	Toronto, Ont.
5. H. E. ROTHWELL, *Assistant Chemist, Standard Varnish Works.*	626 Cary Ave., West New Brighton, N.Y.
5. C. A. SCHOFIELD, *Chemist, Schoell-Kopf-Hartford & Hanna Co.*	Buffalo, N.Y.
1.*A. C. T. SHEPPARD, *Asst. Topographer, Geological Survey.*	Ottawa, Ont.
1. F. R. SMITH, B.A., *Manager, Can. Gowganda Silver Mines.*	Gowganda, Ont.
3. E. R. SMITHRIM, B.A.Sc., *Supt., Watrous Electric Light, Power and Traction Co., Ltd.*	Watrous, Sask.
1.*W. SNAITH, *Secy.-Treas., The Thor Iron Works, Ltd.*	Toronto, Ont.
3. A. C. SPENCER, B.A.Sc., *Mechanical Engineer, Hamilton Stove & Heater Co.*	Hamilton, Ont.
3. G. S. STEWART, *Sales Engineer, Canadian General Electric Co.*	Montreal, Que.
1. J. A. STILES, B.A.Sc., *Professor of Civil Engineering, University of N. B.*	Fredericton, N.B.

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*Diploma with honours.

1907—*Continued.*

3.*J. L. STIVER, Ottawa, Ont.
Electrical Standard Laboratory, Inland Revenue Department.
1. J. L. G. STUART, B.A.Sc., Toronto, Ont.
Railway and Special Works Department, City Hall.
1. G. F. SUMMERS, O.L.S., Haileybury, Ont.
Routly & Summers, Engineers and Surveyors.
1.*H. W. SUTCLIFFE, New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. P. M. THOMPSON, B.A.Sc., Ambridge, Pa.
Draftsman, American Bridge Co
3. O. R. THOMSON, B.A.Sc., Trenton, Ont.
The Electric Power Co.
1. L. R. THOMSON, B.A.Sc., Montreal; Que.
With Dominion Bridge Co.
1. W. J. WALKER, Grant, Ont.
With Transcontinental Ry.
1. E. D. WILKES, B.A.Sc., Toronto, Ont.
Main Drainage Department, City Hall.
3. A. F. WILSON, B.A.Sc., Chicago, Ill.
Inspector, Chicago Telephone Co.
3. M. H. WOODS, B.A.Sc., Aylmer West, Ont.
1. G. W. A. WRIGHT, 517 Oxford St., London, Ont.
Warren Bituminous Paving Co.
3. J. YOUNG, Box 2973, Winnipeg, Man.
3.*A. R. ZIMMER, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.

1908.

3. H. G. AKERS, B.A.Sc., 448-449 Confederation Life Bldg., Toronto, Ont.
Akers, Mason & Bonnington, Chemical Engineers.
3. L. F. ALLAN, Toronto, Ont.
Roadway Dept., City Hall.
1.*C. B. ALLISON, O.L.S., South Woodslee, Ont.
1.*R. M. ANDERSON, B.A.Sc., Burlington, Ont.
Speight & Van Nostrand Co.
5. R. J. ARENS, B.A.Sc., Akron, O.
Chemist, Firestone Tire & Rubber Co.
3. H. C. BARBER, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
1. E. BARTLETT, B.A.Sc., Medicine Hat, Alta.
Surveyor and Civil Engineer.
2. F. J. BEDFORD, Porcupine, Ont.
Dome Mines.
1.*G. G. BELL, Portland, Me.
With Sawyer & Moulton, Consulting Engineers.
3. G. E. BLACK, B.A.Sc., Guelph, Ont.
Roadway Engineer, Provincial Prison Farm.
3. H. F. BOWES, Toronto, Ont.
Superintendent of Warren Bituminous Paving Co., Ltd.
3.*J. H. BRACE, Montreal, P.Q.
Traffic Engineer, Bell Telephone Co.
1. P. R. BRECKEN, B.A.Sc., Toronto, Ont.
Assistant Secretary, Y.M.C.A.

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*Diploma with honours.

1908—*Continued.*

3. E. I. Brown, Toronto, Ont.
Sales Dept., Northern Electric and Manufacturing Co.
1. W. F. M. Bryce, Ottawa, Ont.
Assistant Engineer, City Engineer's Department.
3. P. H. Buchan, B.A.Sc., Vancouver, B.C.
Engineering Department, B.C. Electric Ry. Co., Ltd.
2. J. E. Campbell, B.A.Sc., Coldstream, Ont.
3. N. A. Campbell, Calgary, Alta.
Chief Chemist, Canada Cement Co.
3. A. M. Carroll, Cobalt, Ont.
Manager, Rochester Cobalt Mines, Ltd.
1. H. R. Carscallen, B.A.Sc., Calgary, Alta.
Assistant Hydrographer, with P. M. Sauder.
3. G. Challen, Chedoke P.O., Hamilton, Ont.
1. F. H. Chesnut, B.A.Sc., Port Mann, B.C.
Resident Engineer, C.N.R. Plant.
1. W. E. Cole (deceased).
4.*W. C. Collett, B.A.Sc., Toronto, Ont.
Manager, Collett Carriage Works.
1. R. Y. Cory, B.A.Sc., England.
With First Canadian Contingent, Expeditionary Force.
3.*H. Coyne, B.A.Sc., Washington Blvd., Chicago, Ill.
Designing Draftsman.
2.*J. D. Cumming, B.A.Sc., Copper Cliff, Ont.
Asst. Mech. Supt., with Canadian Copper Co.
6. A. D. Dahl, B.A.Sc., Midland, Mich.
Chemist, Dow Chemical Co.
1. F. A. Danks, 544 Gladstone Ave., Toronto, Ont.
3. J. Darroch, Detroit, Mich.
Draftsman, Autoparts Mfg. Co.
3. H. C. Doorly (deceased).
2. R. H. Douglas, Edmonton, Alta.
Department of Public Works.
2.*F. C. Dyer, B.A.Sc., Toronto, Ont.
Lecturer in Mining Engineering, University of Toronto.
1. F. M. Eagleson, Winchester, Ont.
Engineer and Surveyor.
1. C. Edwards, B.A.Sc., Toronto, Ont.
Dept. of Public Works, City Hall.
1. S. L. Evans, B.A.Sc., Corinth, Ont.
Dominion Land Surveyor.
1. E. O. Ewing, Toronto, Ont.
1. O. L. Flanagan, B.A.Sc., Toronto, Ont.
With C. H. Mitchell, Consulting Engineer, 1003 Traders Bank Bldg.
1. C. Flint, B.A.Sc., Winnipeg, Man.
Assistant Engineer, C.P.R.
1. A. H. Foster, B.A.Sc., Cochrane, Ont.
With T. C. Ry.
3. G. C. Francis, Verschoyle, Ont.
3. S. S. Gear, Fort Erie, Ont.
1. C. A. Grassie, B.A.Sc., Welland, Ont.
3.*C. L. Gulley, B.A.Sc., Toronto, Ont.
Northern Electric and Manufacturing Co.

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*Diploma with honours.

1908—*Continued.*

3. J. W. Hackner, B.A.Sc., Sandford, Ont.
Inspector of Public Works.
3. F. L. Haviland, Hamilton, Ont.
Draftsman, Hamilton Bridge Works Co.
1.*C. D. Henderson, Walkerville, Ont.
Canadian Bridge Co.
5.*D. J. Huether, B.A.Sc., Toronto, Ont.
With Dunlop Tire and Rubber Co.
1. A. D. Huether, B.A.Sc., 77 Grenville St., Toronto, Ont.
3.*A. N. Hunter, B.A.Sc., Toronto, Ont.
3. S. B. Iler, Commercial Chambers, Brantford, Ont.
Asst. Engineer, Hydro-Electric System.
1.*J. T. Johnston, B.A.Sc., Ottawa, Ont.
Hydraulic Engineer, Water Power Branch, Dept. of the Interior.
2. H. G. Kennedy, B.A.Sc , Cobalt, Ont.
Cobalt Lake Mine.
1.*W. R. Keys, North Bay, Ont.
T. & N. O Ry.
3.*J. N. M. Leslie, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. F. C. Lewis, Chicago, Ill.
American Bridge Co.
3. H. R. Lynar, St. Catharines, Ont.
Welland Ship Canal Office.
1.*W. G. McGeorge, Chatham, Ont.
Consulting Engineer.
1. J. M. McGregor, Ridgetown, Ont.
1. L. A. McLean, B.A.Sc. (deceased).
1. W. A. A. McMaster, A.S. & D.L.S., Prince Albert, Sask.
1. H. C. McMordie, B.A.Sc., Fort William, Ont.
Local Manager Trussed Concrete Steel Co. of Canada, Ltd.
1.*A. A. McRoberts, B.A.Sc., North Bay, Ont.
T. &. N. O. Ry.
5.*N. G. Madge, New York, N.Y.
Chief Chemist, Continental Rubber Co. of N. Y.
3. J. E. Malone, B.A.Sc., Chicago, Ill.
With Illinois Steel Co.
5. K. D. Marlatt, Oakville, Ont.
The Marlatt & Armstrong Co.
1. R. J. Marshall, B.A.Sc., Toronto, Ont.
Demonstrator in Applied Mechanics, University of Toronto.
5. G. L. Milligan, B.A.Sc., Brampton, Ont.
1. A. B. Mitchell, Montreal, Que.
With N. MacLeod, Contractors.
4.*J. C. P. Molesworth (deceased).
3. E. D. Monk, B.A.Sc., Cincinnati, Ohio.
General Electric Co.
3.*F. H. Moody, B.A.Sc., 70 Bond St., Toronto, Ont.
Mechanical Editor, Canadian Railway & Marine World.
3. J. H. Morice, B.A.Sc., 24 Swan St., Schenactady, N.Y.
General Electric Co.
3. F. E. H. Mowbray, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
3.*W. P. Murray, B.A.Sc., Montreal, Que.
Dominion Bridge Co.

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*Diploma with honours.

1908—*Continued.*

3. W. deC. O'Grady, Winnipeg, Man.
Engineer, Gas Traction Co., Ltd.
1. H. J. Peckover, B.A.Sc., 205 Dunn Ave., Toronto, Ont.
Draughtsman, City Hall.
1.*M. Pequegnat, B.A.Sc., Berlin, Ont.
1. H. G. Phillips, D.L.S., S.L.S., Regina, Sask.
Smith & Phillips, Civil Engineers.
3. M. Pivnick, B.A.Sc., Toronto, Ont.
1.*E. M. Proctor, B.A.Sc., Toronto, Ont.
Draftsman, Dept. of Railways and Bridges, City Hall.
3.*C. F. Publow, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
1. J. T. Ransom, B.A.Sc., Toronto, Ont.
Demonstrator in Surveying, University of Toronto.
1.*W. B. Redfern, B.A.Sc., Steelton, Ont.
1. F. L. Richardson, B.A.Sc., Toronto, Ont.
With Miller, Cummings & Robertson.
3. H. A. Ricker, B.A.Sc , Hamilton, Ont.
Canadian Westinghouse Co.
1. A. R. Robertson, B.A.Sc., Toronto, Ont.
With McGregor & McIntyre.
5. F. A. Robertson, Toronto, Ont.
With Canada Cement Co.
1.*W. A. Robinson, Winnipeg, Man.
Right-of-Way Surveyor, C.P.R.
3. R. C. Robinson, Winnipeg, Man.
With C. N. Ry.
5. L. J. Rogers, B.A.Sc., Toronto, Ont.
Demonstrator in Chemistry, University of Toronto.
2.*R. R. Rose, B.A.Sc., France.
With British Army.
3. D. Ross, B.A.Sc., Toronto, Ont.
Smith, Kerry & Chace.
1. A. O. Secord, Brantford, Ont.
3. W. E. V. Shaw, B.A.Sc., Milwaukee, Wis.
With Milwaukee Elec. Ry. and Light Co.
3. H. F. Shearer, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
1. W. L. Stamford, B.A.Sc., Point du Bois, Man.
Inspector on Concrete Work, Hydro-Electric Power Plant.
3. R. H. Starr, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
3. A. W. J. Stewart, Toronto, Ont.
Toronto Hydro-Electric System.
3. J. St. Lawrence, Erie, Pa.
Supt. of Engine Shops, Erie City Iron Works.
1. J. J. Stock, D.L.S., 448 Cooper St., Ottawa. Ont.
Contractor.
1. H. B. Stuart, B.A.Sc., Hamilton, Ont.
Draftsman, Hamilton Bridge Works Co.
2. J. L. G. Stuart, B.A.Sc., Toronto, Ont.
Railway & Special Works Department, City Hall.
3. A. D. Sword, B.A.Sc., Clarkson's, Ont.

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*Diploma with honours.

1908—*Continued.*

3. J. W. R. Taylor, B.A.Sc., Campbellford, Ont.
Erecting Engineer for Canadian Westinghouse Co.
1.*W. E. Taylor, B.A.Sc., Toronto, Ont.
3. V. C. Thomas, B.A.Sc., Cleveland, Ohio.
With Wellman-Seaver-Morgan Co.
1. J. H. Thornley, B.A.Sc., Niagara Falls. Ont.
H. D. Symnes & Co.
1. C. G. Toms, B.A.Sc., 56 Spencer Ave., Toronto, Ont.
General Manager, Toms Contracting Co., Ltd.
1. H. W. Tye, Winnipeg, Man.
Construction Dept., C.P.R.
3. C. P. Van Norman, B.A.Sc., Toronto, Ont.
Toronto and York Radial Ry. Co.
1. T. L. Villeneuve, Chicoutimi, Que.
Assistant Engineer, Dept. of Public Works.
1. J. A. Walker, B.A.Sc., Vancouver, B.C.
Assistant to Surveyor-General.
3.*B. W. Waugh, B.A.Sc., Ottawa, Ont.
Dept. of the Interior.
3. R. M. Wedlake, B.A.Sc., Brantford, Ont.
With Cockshutt Plow Co., Ltd.
3. R. P. Weir, Toronto, Ont.
Canadian Manager, Cutter Elec. and Mfg. Co.
1. A. M. West, B.A.Sc., Vancouver, B.C.
C.N.R. Office.
1. W. R. White, Drayton, Ont.
3. W. J. White, B.A.Sc., Boston, Mass.
Supt. on Construction, General Electric Co.
3.*F. D. Wilson, B.A.Sc., Toronto, Ont.
Standard Steel Const. Co.
1. J. M. Wilson, Moose Jaw, Sask.
Wilson, Townsend and Saunders, Engineers and Contractors.
1. D. O. Wing, Vancouver, B.C.
City Engineer's Office.
3.*R. Young, Lake Bunstzen, Burrard Inlet, B.C.

1909.

3. E. G. Arens, Hamilton, Ont.
Canadian Westinghouse Co.
3. H. V. Armstrong, Estevan, Sask.
Town Engineer.
2.*E. T. Austin, B.A.Sc., Coniston, Ont.
With the Mond Nickel Co.
3. W. H. Barry, B.A.Sc., Niagara Falls, Ont.
Anderson and Barry, Engineers and Surveyors.
3. R. D. S. Beckstedt, B.A.Sc., Sault Ste. Marie, Ont.
Sales Agent, Tagona Water & Light Co.
3. R. E. Beith, Toronto, Ont.
Dept. of Public Works.
1.*G. A. Bennett, B.A.Sc., Tillsonburg, Ont.
Dominion Land Surveyor, Dept. of the Interior.
3. E. R. Birchard, B.A.Sc., England.
Sergt.-Major with Second Canadian Contingent.

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*Diploma with honours.

1909—*Continued.*

3. W. D. BLACK, B.A.Sc., Montreal, Que.
Supt., Otis-Fensom Elevator Co., Ltd.
3.*D. C. BLIZARD, B.A.Sc., Toronto, Ont.
Supt. Mechanical Construction, Toronto Power Co.
1.*W. J. BOULTON, B.A.Sc., Wallaceburg, Ont.
3. G. H. BOWEN, B.A.Sc., Niagara Falls, Ont.
Engineer on Construction, H. A. Campaigne & Co.
3. C. E. BROWN, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
1. E. W. BROWNE, B.A.Sc., 247 Cannon St. E., Hamilton, Ont.
1. J. A. BUCHANAN, 140 Jasper West, Edmonton, Alta.
3. J. E. BURNS, B.A.Sc., 231 Seaton St., Toronto, Ont.
1. M. G. CAMERON, B.A.Sc., Peterboro', Ont.
3.*R. A. CAMPBELL, Sault Ste. Marie, Ont.
Supt., Tagona Water & Light Co.
1. V. S. CHESNUT, B.A.Sc., Sault Ste. Marie, Ont.
Resident Engineer, C.N.P.R.
1.*C. G. CLINE, B.A.Sc., Kamloops, B.C.
Assistant Engineer, Dept. of the Interior.
1. J. G. COLLINSON, B.A.Sc., Niagara Falls, N.Y.
Carborundum Co.
1. G. W. COLTHAM, B.A.Sc., Aurora, Ont.
3.*H. A. COOCH, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. W. E. CORMAN, Toronto, Ont.
Chief Draftsman, with C. H. & P. H. Mitchell.
3. T. H. CROSBY, B.A.Sc., Vancouver, B.C.
Sales Engineer, Canadian Westinghouse Co.
3. R. H. CUNNINGHAM, 193 Dougall Ave., Windsor, Ont.
Hoskins Electrical Manufacturing Co.
1.*F. A. DALLYN, B.A.Sc., Toronto, Ont.
Engineer, City Testing Laboratory, Board of Public Health.
3. C. N. DANKS, Sherbrooke, Que.
Asst. Engineer, Jenckes Machine Co.
1. E. M. DANN, Kamloops, B.C.
Asst. Engineer, Hydrographic Survey.
3. H. W. DAVIS, Kingston, Ont.
With A. Davis & Son, Ltd., Leather Manufacturers.
2.*A. I. DAVIS, B.A.Sc., Toronto, Ont.
Canada Foundry Co.
1. H. C. DAVIS, Bangalore, India.
With Dr. Leslie Coleman.
1. I. H. DAWSON, Cochrane, Ont.
With T.C. Ry.
3. W. H. DELAHAYE, B.A.Sc., Pembroke, Ont.
3. W. P. DERHAM, B.A.Sc., Ottawa, Ont.
5.*W. A. DODDS, B.A.Sc., Syracuse, N.Y.
With Penman-Littlehales Chemical Co.
1. R. H. DOUGLAS, Edmonton, Alta.
Department of Public Works.
1. M. O. DUFF,
2. L. J. DUTHIE, Timmins, Ont.
Assayer and Surveyor, Porcupine Crown Mine.
1. F. S. FALCONER, B.A.Sc., 127 Slater St., Ottawa, Ont.

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*Diploma with honours.

1909—*Continued.*

3. T. A. Fargey, B.A.Sc., Detroit, Mich.
With Scott Bros. Electric Co.
1. J. B. Ferguson, B.A.Sc., Winnipeg, Man.
Eng. Dept. C.N.R.
3. A. T. Fergusson, B.A.Sc., 70 Madison Ave., Toronto, Ont.
3. T. E. Freeman, B.A.Sc., Peterboro', Ont.
Canadian General Electric Co.
3. E. R. Frost, B.A.Sc., Tweed, Ont.
1. A. E. Glover, B.A.Sc., Edmonton, Alta.
5. A. E. Gooderham, Toronto, Ont.
With Gooderham & Worts.
1. D. A. Graham, B.A.Sc., Chilliwack, B.C.
Track Engineer, C.N.P.R.
2. R. R. Grant, 106 Warren Rd., Toronto, Ont.
Contractor.
1. J. E. Gray, B.A.Sc., Edmonton, Alta.
With T.C. Ry.
1. G. E. D. Greene, B.A.Sc., England.
With First Canadian Contingent.
1. W. H. Greene, Moose Jaw, Sask.
Assistant City Engineer.
1. W. W. Gunn, B.A.Sc., 133 Isabella St., Toronto, Ont.
3. F. G. Hagerman Cobourg, Ont.
3. C. J. Harper, Le Pas, Man.
Engineer and Surveyor.
1. D. W. Harvey, B.A.Sc., Toronto, Ont.
Canada Foundry Co.
1. C. O. Hay (deceased).
3.*J. Hemphill, Magpie Mine, Ont.
Construction Engineer, Algoma Steel Corpn., Mines Dept.
1.*G. Hogarth, Toronto, Ont.
Engineer's Office, Dept. of Public Works of Ontario.
3. A. E. Holmes, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
3. C. R. Holmes, B.A.Sc., Detroit, Mich.
With Electric Storage Battery Co.
1. G. C. Hoshal, B.A.Sc., Windsor, Ont.
Hydro-Electric Power Commission.
3. C. Hughes, B.A.Sc., England.
Second Canadian Contingent.
1. A. E. Hunter, B.A.Sc., (deceased).
3.*H. Irwin, B.A.Sc., Toronto, Ont.
Editor, Canadian Engineer.
3. J. Isbister, B.A.Sc., Victoria Mines, Ont.
Electrical Supt., with Mond Nickel Co.
3. F. P. Jackes, B.A.Sc., Toronto, Ont.
Traffic Dept., Bell Telephone.
1.*J. E. Jackson, Oxford Centre, Ont.
1. E. W. James, B.A.Sc., Winnipeg, Man.
Bridge Engineer, Manitoba Government.
1.*C. C. Johnson, B.A.Sc., Sudbury, Ont.
Chipman & Power.
1. C. E. Johnston, B.A.Sc., Fairford, Man.
Dom. Land Surveyor.

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*Diploma with honours.

1909—*Continued.*

1.	W. J. Johnston, *Mackenzie, Broadfoot & Johnston.*	Vancouver, B.C.
1.*	A. H. E. Keffer, *With T. & N.O. Ry.*	North Bay, Ont.
3.	J. B. O. Kemp, B.A.Sc., *With Toronto Structural Steel Co.*	Toronto, Ont.
3.	W. R. Key, B.A.Sc., *Asst. Engineer, Turnbull Elevator Co.*	Toronto, Ont.
5.	H. N. Klotz, B.A.Sc., *With First Canadian Contingent.*	England.
3.	A. W. Lamont, B.A.Sc., *Sales Engineer, Toronto Hydro-Electric System.*	Toronto, Ont.
3.*	C. B. Langmuir, B.A.Sc., *Manager, Electrical Dept., Factory Products, Ltd.*	Toronto, Ont.
3.	A. E. Lennox, B.A.Sc., *Publicity Engineer, National Electric Lamp Association.*	Cleveland, Ohio.
1.*	R. W. E. Loucks, *Brown & Loucks, Engineers & Contractors.*	Saskatoon, Sask.
1.	N. C. A. Lloyd,	Solina, Ont.
3.	E. D. MacFarlane, B.A.Sc., *With Houston Electric Ry. Co.*	Houston, Texas.
1.	J. G. Mackinnon, *Resident Engineer, C.N.R.*	Fitzhugh, Alta.
1.	W. A. MacLachlan, B.A.Sc.,	Toronto, Ont.
3.	B. A. Maclean, B.A.Sc.,	Orillia, Ont.
1.	N. W. Macpherson, B.A.Sc.,	St. Thomas, Ont.
3.	D. D. McAlpine, B.A.Sc., *Engineer, Riordon Paper and Pulp Co.*	Hawkesbury, Ont.
1.	A. S. McArthur, B.A.Sc.,	56 Lowther Ave., Toronto, Ont.
3.	C. R. McCollum, B.A.Sc., *Toronto Hydro-Electric System.*	Toronto, Ont.
3.*	A. S. McCordick, B.A.Sc., *Assistant to City Engineer.*	Sault Ste. Marie, Ont.
3.	P. J. McCuaig, B.A.Sc., *With First Canadian Contingent.*	England.
3.	W. G. McIntosh, B.A.Sc., *Herbert Morris Crane and Hoist Co.*	Toronto, Ont.
1.	F. H. McKechnie, B.A.Sc.,	Toronto, Ont.
3.	J. H. McKnight	Simcoe, Ont.
3.	G. McLeod, *Electrician, Electric Light & Ry. Co.*	Waupaca, Wis.
1.	V. McMillan, B.A.Sc., *Sewer Dept., City Hall.*	Toronto, Ont.
3.	N. H. Manning, B.A.Sc., *District Representative, Canadian Insp. & Testing Labs.*	Toronto, Ont.
1.*	A. B. Manson, B.A.Sc., *City Engineer.*	Stratford, Ont.
1.	E. S. Martindale, B.A.Sc., *Dominion Land Surveyor.*	Aylmer, Ont.
1.	O. W. Martyn, B.A.Sc., D.L.S., S.L.S.,	Box 443, Swift Current, Sask.
2.	C. A. Morris, B.A.Sc., *Canadian Copper Co.*	Copper Cliff, Ont.
3.	G. Morton, B.A.Sc., *Canadian Westinghouse Co.*	Calgary, Alta.

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*Diploma with honours.

1909—*Continued.*

1.*F. V. Munro, B.A.Sc., Chatham, Ont.
1. E. A. Neville, B.A.Sc., Vancouver, B.C.
Neville & Stewart, Civil Engineers.
1. J. Newton, B.A.Sc., Toronto, Ont
City Engineer's Department.
3.*L. S. Odell, Toronto, Ont.
Fellow in Drawing, University of Toronto.
3. V. J. O'Donnell, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. J. J. O'Hearn, Fort William, Ont.
Manager, Supply Dept., Canadian General Electric Co.
1. A. W. Pae, Calgary, Alta.
Davidson & Pae, Real Estate Brokers.
1.*A. M. Petry, B.A.Sc., Toronto, Ont.
Assistant Manager, "Chas. Potter."
3. W. M. Philp, England.
First Canadian Contingent.
1. R. B. Pigott. 157 Wentworth St. S., Hamilton, Ont.
2. G. M. Ponton, Calgary, Alta.
Harrison & Ponton.
3.*C. J. Porter, B.A.Sc., Portland, Oregon.
Draftsman, Mount Hood Ry. & Power Co.
3. A. I. Proctor, 852 King St. E., Hamilton, Ont.
1. J. Quail, Winnipeg, Man.
Manitoba Bridge and Iron Works.
1. A. F. Ramsperger, Toronto, Ont.
With Canada Foundry Co.
1.*C. R. Redfern, B.A.Sc., Toronto, Ont.
Engineer, P. Lyall & Sons, Ltd., Contractors.
3.*L. T. Rutledge, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
1. A. U. Sanderson, B.A.Sc., 10 Oaklands Ave., Toronto, Ont.
3.*R. A. Sara, B.A.Sc., Winnipeg, Man.
Sales Manager, City Light and Power Dept.
3.*A. Schlarbaum, B.A.Sc., 5 Lansdowne Ave., Galt, Ont.
Hydro-Electric Engineer for R. P. & P. Co
3.*C. Schwenger, B.A.Sc., Toronto, Ont.
Electrical Department, City Hall.
1. C. A. Scott, Toronto, Ont.
Roadway Department, City Hall.
1. A. Sedgwick, Toronto, Ont.
Ontario Dept. of Public Works.
1. B. H. Segre, B.A.Sc., Winnipeg, Man.
Dominion Land Surveyor, Dept. of Interior.
1. F. V. Seibert, B.A.Sc., Edmonton, Alta.
Engineer and Surveyor, Dept. of Interior.
5. M. R. Shaw, B.A.Sc., Toronto, Ont.
3. M W. Sparling, B.A.Sc., Campbellford, Ont.
Seymour Power and Elec. Co.
3. J. J. Spence, Toronto, Ont.
With Sovereign Construction Co.
1. D. S. Stayner, B.A.Sc., Toronto, Ont.
Resident Engineer for Harbor Commission.
1.*N. C. Stewart, B.A.Sc., Vancouver, B.C.
Neville & Stewart.

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*Diploma with honours.

1909—*Continued.*

1.*P. H. Stock, St. Catharines, Ont.
Asst. Engineer, N. St. C. & T.R. Ry.
1. J. C. Street, B.A.Sc., St. Catharines, Ont.
Welland Ship Canal.
3. S. Stroud, B.A.Sc., Toronto, Ont.
With Canadian Westinghouse Co.
1. C. C. Sutherland, B.A.Sc., 446 Heiminck St., Edmonton, Alta.
City Engineer's Staff.
1. R. G. Swan, B.A.Sc., New Westminster, B.C.
B. C. Hydrographic Survey.
1. A. D. Sword, B.A.Sc., Clarkson's, Ont.
1.*H. W. Tate, B.A.Sc., 224 Wright Ave., Toronto, Ont.
With James, Loudon & Hertzberg, Engineers.
3.*E. A. Thompson.
1. G. A. Tipper, B.A.Sc., Brantford, Ont.
Contracting Surveyor.
3. A. G. Trees, B.A.Sc., Toronto, Ont.
With Saml. Trees & Co.
3. W. G. Turnbull, B.A.Sc., Toronto, Ont.
Chief Engineer, Turnbull Elevator Co.
1. J. E. Underwood, Saskatoon, Sask.
McArthur, Murphy & Underwood.
1. C. P. Van Norman, B.A.Sc., Toronto, Ont.
Asst. Engineer, Toronto & York Radial Ry. Co.
1. J. Van Nostrand, 97 Delaware Ave., Toronto, Ont.
1. A. Vatcher, B.A.Sc., Freshwater, Bay de Verde, Nfld.
With the Reid Newfoundland Co.
1. C. M. Walker, B.A.Sc., Banff, Alta.
Dom. Land Surveyor.
1. E. E. Webb, Box 358, Orillia, Ont.
Contractor.
1. C. E. Webb, B.A.Sc., 227 Spadina Rd., Toronto, Ont.
3. F. C. White, B.A.Sc., Walkerville, Ont.
With Canadian Bridge Co.
3. A. R. Whitelaw, B.A.Sc., 10720 103rd St., Edmonton, Alta.
1. R. G. Wilkinson, Aberarder, Ont.
5.*J. A. McK. Williams, B.A.Sc., Toronto, Ont.
A. E. Ames & Co.
1.*O. T. G. Williamson, B.A.Sc., Quebec, Que.
With Canadian Stewart Co.
3. L. R. Wilson, B.A.Sc., Montreal, Que.
With St. Lawrence Bridge Co., Ltd.
3. F. F. Wilson, B.A.Sc., Edmonton, Alta.
Surveyor.
2. S. A. Wookey, B.A.Sc., Timmins, Ont.
Field Engineer, Dominion Mineral Exploration Syndicate

1910.

2. J. H. Adams, B.A.Sc., 25 Maynard Ave., Toronto, Ont.
3.*O. F. Adams, B.A.Sc., Toronto, Ont.
1.*W. G. Amsden, B.A.Sc., 95 Howland Ave., Toronto, Ont.
1. J. A. Baird, B.A.Sc., Leamington, Ont.
With A. Baird, O.L.S., C.E.

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*Diploma with honours.

1910—*Continued.*

1.*W. J. Baird, B.A.Sc., England.
First Canadian Contingent.
1. H. A. Barnett, B.A.Sc., 125 Yorkville Ave., Toronto, Ont.
1.*E. W. Berry, Seaforth, Ont.
1. H. C. Bingham, D.L.S. New Grayson Bldg., Moose Jaw, Sask.
Engineer and Surveyor.
2. D. G. Bisset, B.A.Sc., Hosmer, B.C.
C.P.R. Coal Mines.
1. R. H. H. Blackwell, Toronto, Ont.
Post-Graduate Course in Engineering, University of Toronto.
1.*E. P. Bowman, B.A.Sc., West Montrose, Ont.
2. A. F. Brock, B.A.Sc., Copper Cliff, Ont.
Chief Mine Surveyor, with Canadian Copper Co.
3. M. O. Browne, 319 Lippincott St., Toronto, Ont.
3. J. R. Burgess, B.A.Sc., Buffalo, N.Y.
With Howard Iron Works.
1. N. G. H. Burnham, B.A.Sc. (deceased).
3.*W. C. Cale, B.A.Sc., Keokuk, Ia.
Stone & Webster Engineering Corporation.
2.*A. D. Campbell, B.A.Sc., Cobalt, Ont.
Mining Engineer, O'Brien Mine.
3. W. M. Carlyle, B.A.Sc., Toronto, Ont.
With Carlyle Construction Co.
3. N. S. Caudwell, Toronto, Ont.
Student at Law, Osgoode Hall.
3. A. W. Chesnut, B.A.Sc., Toronto, Ont.
1. D. C. Chisholm, B.A.Sc., Winnipeg, Man.
1. H. S. Clark. St. Catharines, Ont.
Welland Ship Canal Staff.
1. J. A. Claveau, Jonquiere, Que.
Assistant Engineer, Jonquiere Pulp Co.
3. L. S. Cockburn, B.A.Sc., Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.
3. A. G. Code, B.A.Sc., England.
First Canadian Contingent.
3. C. R. Cole, B.A.Sc., Toronto, Ont.
1. G. A. Colquhoun, B.A.Sc., Vankleek Hill, Ont.
4.*J. H. Craig, B.A.Sc., Toronto, Ont.
Craig & Madill, Architects.
3.*C. D. Dean, B.A.Sc., 14 Wright Ave., Toronto, Ont.
5. A. V. DeLaporte, B.A.Sc., Toronto, Ont.
Chemist, Provincial Board of Health.
3. R. L. Dobbin, B.A.Sc., Peterboro', Ont.
Waterworks Dept.
3.*W. P. Dobson, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Comm.
3.*J. M. Duncan, B.A.Sc., England.
First Canadian Contingent.
1. L. Eadie.
2. V. H. Emery, B.A.Sc., Timmins, Ont.
Mine Supt., Hollinger Mines.
3. W. J. Evans, B.A.Sc., Toronto, Ont.
3. H. W. Fairlie, Montreal, Que.
Ry. Dept., The Northern Elec. & Mfg. Co.

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*Diploma with honours.

1910—*Continued.*

3.*C. R. Ferguson, B.A.Sc., Toronto, Ont.
Dominion Bridge Co
3. J. W. Ferguson, B.A.Sc., Lachine Locks, Que.
With Dominion Bridge Co.
4.*J. B. K. Fisken, B.A.Sc., Toronto, Ont.
1. A. W. Fletcher, B.A.Sc., Calgary, Alta.
Department of Public Works.
1.*J. A. Fletcher, Fisher River, Man.
Assistant to E. W. Robinson, D.L.S.
3. F. T. Fletcher, B.A.Sc., Calgary, Alta.
Dept. of Public Works.
3. T. R. C. Flint, B.A.Sc., Toronto, Ont.
3. R. C. Follett,
2. J. M. Foreman, B.A.Sc., Lucan, Ont.
1. W. J. Foster.
3.*W. C. Foulds, B.A.Sc., Toronto, Ont.
Roadways Dept., City Hall.
1. A. Fraser, B.A.Sc., Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.
2. J. Fredin, London, Ont.
3. H. Gall, B.A.Sc., Toronto, Ont.
With Frank Barber, Civil Engineer.
1. M. M. Gibson, B.A.Sc., Toronto, Ont.
Gibson & Gibson, O.L.S., C.E.
1. J. M. Gibson, B.A.Sc., Toronto, Ont.
With Chipman & Power.
1. V. A. E. Goad, B.A.Sc., Montreal, P.Q.
Chas. E. Goad Co
3. V. S. Goodeve, Hamilton, Ont.
With Canadian Westinghouse Co.
1. H. Goodridge.
2. W. A. Gordon, Sundridge, Ont.
3. V. F. Gourlay, B.A.Sc., Galt, Ont.
Manufacturer
3. E. B. Graham, B.A.Sc., 411 McNair Ave, Wilkinsburg, Pa.
2 R. L. Greene, B.A.Sc., Ottawa, Ont.
Agent, Canadian Allis-Chalmers, Ltd.
5. J. H. Harris, B.A.Sc., Danforth Ave., Toronto, Ont.
W. Harris & Co.
1. N. J. Harvie, B.A.Sc., Orillia, Ont.
1. J. G. Helliwell, Windsor, Ont.
With Canadian Bridge Co.
1. J. F. Henderson, 62 St. Mary St., Toronto, Ont.
3. F. G. Hickling, B.A.Sc., East Pittsburgh, Pa.
Westinghouse Electric & Manufacturing Co.
1. O. H. Hoover, Calgary, Alta.
Dept. of the Interior.
2. P. E. Hopkins, B.A.Sc., Porcupine, Ont.
With Ontario Bureau of Mines.
3.*W. J. Irwin,
2. F. L. James, B.A.Sc., Tillsonburg, Ont.
3. E. A. Jamieson, Vancouver, B.C.
District Engineer, Water Rights Branch, Dept. of Lands.
1. H. C. Johnston, 509 Palmerston Ave., Toronto, Ont.

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*Diploma with honours.

1910—*Continued.*

1. R. H. Johnston, B.A.Sc., 716 9th St., Edmonton, Alta.
1. J. C. Keith, B.A.Sc., Calgary, Alta.
2.*J. T. King, B.A.Sc., Toronto, Ont.
Lecturer in Mining Engineering, University of Toronto.
3. G. A. Kingstone, B.A.Sc., Toronto, Ont.
With Jones & Glassco.
2. G. L. Kirwan, B.A.Sc., Ottawa, Ont.
Topographical Surveys Dept., Dept. of Interior.
5. P. T. Kirwan, B.A.Sc., Ottawa, Ont.
Chemist, Inland Revenue Dept.
1. S. Knight, B.A.Sc., Edmonton, Alta.
With Driscoll & Knight.
3. E. R. Lawler, Toronto, Ont.
Toronto Hydro-Electric System.
3.*C. B. Leaver, B.A.Sc., 459 Bloor St., Toronto, Ont.
3. R. G. Lee, B.A.Sc., Toronto, Ont.
Asst. Sales Manager, Toronto Hydro-Electric System
1. J. N. Leitch (deceased).
1. J. C. Longstaff, 20 Webster Ave., Toronto, Ont.
3. J. B. MacDonald, B.A.Sc., Winnipeg, Man.
Canadian Inspection & Testing Laboratories.
2. A. D. Macdonald, B.A.Sc., Cobalt, Ont.
Asst. Supt. Penn-Canadian Mine.
1. J. A. Macdonald, B.A.Sc., Toronto, Ont.
1. G. A. Macdonald, B.A.Sc., Fernie, B.C.
1. A. E. MacGregor, B.A.Sc., Simcoe, Ont.
With Chipman & Power.
1. E. G. MacKay, B.A.Sc., Hamilton, Ont.
MacKay, MacKay & Webster, Civil Engineers and Surveyors.
1. G. G. MacLennan, B.A.Sc., Ottawa, Ont.
Engineer, Foundations Co
1. D. D. Macleod, B.A.Sc., Calgary, Alta.
Dept. of the Interior.
3. H. G. MacMurchy, B.A.Sc., Messina, N.Y.
3.*H. J. MacTavish, B.A.Sc., England.
Second Canadian Contingent.
4. T. C. McBride, B.A.Sc., 501 Colborne St., London, Ont.
1. S. G. McDougall, B.A.Sc., 287 McLaren St., Ottawa, Ont.
1.*T. A. McElhanney, B.A.Sc., 706 Dominion Trust Bldg., Vancouver, [B.C.
McElhanney Bros., Civil Engineers, D. & B.C. Land Surveyors.
1.*P. J. McGarry, D.L.S., O.L.S., Toronto, Ont.
3.*L. R. McKim, Brantford, Ont.
1.*J. McNiven, B.A.Sc., Moose Jaw, Sask.
Resident Engineer, Dept. of Trade and Commerce.
3. J. I. McSloy, B.A.Sc., St. Catharines, Ont.
Textile Manufacturer.
2. A. W. R. Maisonville, B.A.Sc., Pilettes Corners, Ont.
1.*N. Marr, B.A.Sc., Prince Albert, Sask.
With C. H. Mitchell & P. H. Mitchell.
1.*W. H. Martin, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
2. A. C. Matthews, B.A.Sc., 89 St. George St., Toronto, Ont.
1. C. H. Meader, B.A.Sc., O.L.S., Toronto, Ont.

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*Diploma with honours.

1910—*Continued*

3.*H. O. Merriman, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
1.*D. J. Miller, Red Deer, Alta.
Alberta Central Ry.
1. F. S. Milligan, B.A.Sc., Toronto, Ont.
3. P. E. Mills, B.A.Sc., 52 Howland Ave., Toronto, Ont.
3. J. P. Morgan, Toronto, Ont.
With Orpen Construction Co.
1. F. R. Mortimer, B.A.Sc., Ottawa, Ont.
Hydrographic Survey, Dept. of Interior.
1. A. H. Munro, B.A.Sc., Campbellford, Ont.
Trent Valley Canal.
3. J. C. Nash, B.A.Sc., Hamilton, Ont.
With Hydro-Electric Dept.
1.*V. A. Newhall, B.A.Sc., Calgary, Alta.
Dept. of Interior.
2.*W. E. Newton, B.A.Sc., Sandon, B.C.
Slocan Star Mines.
1. F. T. Nichol, B.A.Sc., Winnipeg, Man.
Assistant Engineer to E. W. Noble, Fireproofing Engineer.
1. C. M. O'Neil, B.A.Sc., Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.
3. C. E. Palmer, B.A.Sc., Toronto, Ont.
Bell Telephone Co.
3. G. C. Parker, B.A.Sc., Toronto, Ont.
Assoc. Editor "Motor Magazine."
3. K. K. Pearce, B.A.Sc., Port Hope, Ont.
1. A. W. Pearson.
3. C. H. Phillips, B.A.Sc., 157 Margueretta St., Toronto, Ont.
1. D. E. Pye, Cranbrook, B.C.
1. W. S. Ramsay, B.A.Sc., Montreal, Que.
With Dominion Bridge Co.
3. B. J. Redfern (deceased).
3. C. E. Richardson, B.A.Sc., Nelson, B.C.
Division Engineer, Dept. of the Interior.
1. H. C. Ritchie, Calgary, Alta.
Dept. of Public Works.
1. O. W. Ross, B.A.Sc.,
Welland Canal Survey.
1. W. F. B. Rubidge, Montreal, Que.
Dominion Bridge Co.
3. W. C. Shaw, B.A.Sc., Toronto, Ont.
Hamilton Gear and Machine Co.
3. N. C. Sherman, Esquimalt, B.C.
Ordnance Office.
1.*W. C. Smith, B.A.Sc., Victoria, B.C.
Engineer, Water Rights Branch, Dept. of Lands.
2. F. L. Smith, Nelson, B.C.
Supt., Queen Victoria Mine.
5. G. E. Smith, B.A.Sc., Bozeman, Mont.
Agricultural College.
2. R. J. Spry, B.A.Sc., Nelson, B.C.
Supt., The B.C. Copper Co.
2. A. L. Steele, B.A.Sc., Toronto, Ont.
Demonstrator in Mining Engineering, University of Toronto.

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*Diploma with honours.

1910—*Continued.*

2.*H. M. Steven, B.A.Sc., Timmins, Ont.
Mine Engineer, Canadian Mining and Finance Co.
1.*L. I. Stone, London, Ont.
Resident Engineer, G.T. Ry.
3. A. L. Sutherland, B.A.Sc., Peterboro', Ont.
With Canadian General Electric Co.
3. E. A. Ternan, B.A.Sc., Toronto, Ont.
Toronto and York Radial Ry. Co.
5.*W. H. Thom, Toronto, Ont.
Factory Manager, Lyman's Drug & Chemical Co.
3. H. B. Thompson, Wellington, Ont.
3. R. M. A. Thompson, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Comm.
2.*C. G. Titus, Cobalt, Ont
Engineer, Timiskaming Mine.
3. K. M. van Allen, B.A.Sc., 60 Bernard Ave., Toronto, Ont.
1. L. T. Venney, B.A.Sc., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
1. N. Wagner, 19 Gerrard St. E., Toronto, Ont.
Bridge Dept., Canada Foundry Co.
1. R. M. Walker, B.A.Sc., 232 St. James St., Montreal, Que.
With Walter J. Francis & Co., Consulting Engineers.
2. T. Walton, B.A.Sc. (deceased).
1. G. A. Warrington, B.A.Sc., Winnipeg, Man.
M.L.S., Parliament Bldgs.
3. M. B. Watson, B.A.Sc., England.
With First Canadian Contingent.
3.*H. M. White, Lachine Locks, Que.
With Dominion Bridge Co.
1. J. L. Whitside, B.A.Sc., Toronto, Ont.
4. W. S. Wickens, B.A.Sc., Toronto, Ont.
Fellow in Drawing, University of Toronto.
3.*G. K. Williams, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
1.*W. H. Wilson, B.A.Sc., Toronto, Ont.
Canada Foundry Co.
3. G. E. Woodley, Charleston, W. Va.
Westinghouse Electric and Mfg. Co.
1. G. R. Workman, Toronto, Ont.
Fellow in Drawing, University of Toronto.
3. L. A. Wright, B.A.Sc., 278 Jarvis St., Toronto, Ont.
Asst. Engineer, C.P.R.
3.*A. W. Youell, B.A.Sc., Sherbrooke, Que.
Canadian Ingersoll Rand Co.
1. W. S. Young, B.A.Sc., Guelph, Ont.

1911.

5.*J. Aitken, B.A.Sc., Brantford, Ont.
Pratt & Letchworth Co.
1. L. B. Allan, B.A.Sc., Toronto, Ont.
3. E. G. Archer, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Comm.
1. L. A. Badgley, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.

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*Diploma with honours.

1911—*Continued.*

1. T. H. Bartley, B.A.Sc., O.L.S., *Toronto Power Co.*	Sturgeon Falls, Ont.
2.* H. L. Batten, *With Copper Queen Smelter.*	Box 564, Douglas, Ariz.
1. G. L. Berkeley, *Asst. Engineer, Surveys Dept. Harbor Commission.*	Toronto, Ont.
3.*J. H. Billings, B.A.Sc., *Post-Graduate Course at Massachusetts Institute of Technology.*	Boston, Mass.
2.*J. R. Bissett, B.A.Sc.,	Toronto, Ont.
3. W. O. Boswell,	Toronto, Ont.
1. F. Bowman, *Dominion Bridge Co.*	Lachine, Que.
3. T. W. Brackinreid, B.A.Sc.,	
2. W. M. Brock, B.A.Sc., *Canadian Bridge Co.*	Walkerville, O
1. W. H. D. Brouse, B.A.Sc., *With Smith, Kerry & Chace.*	Toronto,
3. H. Brown, B.A.Sc., *Dept. of the Interior.*	Calgary, Alta.
3.*E. T. Cain, B.A.Sc.,	Toronto, Ont.
1. C. S. Cameron,	Beaverton, Ont.
1. C. D. Campbell, *Town Engineer.*	Galt, Ont.
6.*W. W. Chadwick, B.A.Sc.,	Hamilton, Ont.
1. R. B. Chandler, B.A.Sc.. *Asst. City Engineer.*	Saskatoon, Sask.
1. P. G. Cherry, B.A.Sc., *Advertising Sales Manager, Might Directories, Ltd.*	Toronto, Ont.
3. E. F. Chesnut, B.A.Sc.,	Vancouver, B.C.
1. H. J. Clark, B.A.Sc.,	Toronto, Ont.
1. F. W. Clark,	669 Spadina Ave., Toronto, Ont.
3. F. S. Cleary (deceased).	
2.*D. B. Cole, B.A.Sc., *Cleveland Cadillac Co.*	Cleveland, Ohio..
3.*A. S. Cook, B.A.Sc., *Saugeen Light and Power Co.*	Southampton, Ont.
1. C. W. Cornell, *Jones, Cornell Const. Co. Ltd.*	New Westminster, B.C.
1. M. E. Crouch, *With H. J. Beatty.*	Pembroke, Ont.
1. O. F. Cummins, *Provincial Drainage Engineer*	Regina, Sask.
3. W. M. Cruthers, B.A.Sc., *Can. Gen. Electric Co.*	Peterboro', Ont.
3. T. J. Cunerty, *With Westinghouse Elec. Co.*	East Pittsburgh, Pa.
1. C. H. Cunningham, B.A.Sc., *Engineer, Frank Barber & Co.*	Toronto, Ont.
1. J. H. Curzon,	Toronto, Ont.
3.*F. K. D'Alton, B.A.Sc., *Testing Dept., C. G. E. Co.*	Peterboro', Ont.
1. W. B. Davis, B.A.Sc.,	Toronto, Ont

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*Diploma with honours.

1911—*Continued.*

3. F. C. DeGuerre, B.A.Sc.,	Vancouver, B.C.
B.C. Electric Co.	
3.*F. H. Downing,	Winnipeg, Man.
With Manitoba Bridge & Iron Works.	
1. W. B. Dunbar, B.A.Sc.,	Toronto, Ont.
5. C. H. Eckert, B.A.Sc.,	Wallaceburg, Ont.
Dominion Sugar Co.	
3. J. A. Elliot, B.A.Sc.,	Niagara Falls, N.Y.
Castner Electrolytic Alkali Co.	
1. G. R. Elliott, B.A.Sc.,	Calgary, Alta.
Hydrographic Survey, Dept. of Interior.	
1. C. F. Elliott, B.A.Sc.,	Toronto, Ont.
Student at Law, Osgoode Hall.	
1. K. A. Farrell, B.A.Sc.,	Toronto, Ont.
3. T. J. Farrelly,	Montreal, Que.
Bell Telephone Co.	
1. S. E. Flook, B.A.Sc.,	Port Arthur, Ont.
O. L. Surveyor and Civil Engineer.	
3. C. C. Flynn.	Chicago, Ill.
5. E. L. Frankel, B.A.Sc.,	Toronto, Ont.
Frankel Bros.	
2. E. E. Freeland, B.A.Sc.,	Ottawa, Ont.
Hydrographic Surveys Branch.	
1. J. R. Freeman, B.A.Sc.,	Toronto, Ont.
4.*H. P. Frid,	Calgary, Alta.
Building Contractor.	
3. R. J. Fuller, B.A.Sc.,	Toronto, Ont.
City Architect's Dept.	
5.*J. L. Gooderham, B.A.Sc.,	Toronto, Ont.
3. R. E. Green, B.A.Sc.,	Toronto, Ont.
3. E. A. Greene, B.A.Sc.,	Peterborough, Ont.
Asst. Supt. Water and Light System.	
3. H. G. Hall,	Woodstock, Ont.
1. G. M. Hamilton, B.A.Sc.,	Port Colborne, Ont.
Asst. Engineer, Welland Ship Canal.	
2. M. B. Heebner, B.A.Sc.,	Coquitlam, B.C.
With The Foundation Co.	
2. F. I. Helson,	Newburgh, Ont.
With C.N. Ry.	
3. H. R. Hill, B.A.Sc.,	Toronto, Ont.
Hydro-Electric System.	
1. A. J. Huff, B.A.Sc.,	
1. K. Huffman,	30 Cowan Ave., Toronto, Ont.
1.*H. Hyatt, B.A.Sc.,	Toronto, Ont.
1.*R. H. Jarvis, B.A.Sc.,	Toronto, Ont.
1.*L. E. Jones,	New Westminster, B.C.
Jones, Cornell Const. Co. Ltd.	
1.*E. A. Kelly,	119 Maryland St., Winnipeg, Man.
Construction Dept., C.P.R.	
3.*M. Kirkwood, B.A.Sc.,	Ampire, N.J.
Crocker-Wheeler Co.	
2.*J. Lanning, B.A.Sc.,	New Liskeard, Ont.
With Sutcliffe & Neelands, Consulting Engineers.	
2. M. I. Lieberman, B.A.Sc.,	Toronto, Ont.

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*Diploma with honours.

1911—*Continued.*

3. G. L. Lillie, B.A.Sc., *With Toronto Hydro-Electric System.*	Toronto, Ont.
6. A. L. Long, B.A.Sc., *Chemist, Park, Blackwell & Co.*	Toronto, Ont.
1.*A. W. P. Lowrie, B.A.Sc.,	Toronto, Ont.
3. W. M. MacAndrew, B.A.Sc., *Allis-Chalmers-Bullock Co.*	Vancouver, B.C.
3.*R. V. Macaulay, B.A.Sc., *Traffic Supervisor, Bell Telephone Co. of Canada.*	Montreal, Que.
2.*J. T. MacBain, *Union Carbide Co.*	Niagara Falls, N.Y.
1.*R. E. A. MacBeth, B.A.Sc.,	Toronto, Ont.
1. F. M. Macdonald, B.A.Sc., *Contractor.*	Toronto, Ont.
3.*W. S. MacKenzie, *With Canadian Linderman Co., Ltd.*	Woodstock, Ont.
1.*J. G. MacLaurin, B.A.Sc.,	Toronto, Ont.
1. J. B. McAndrew, B.A.Sc.,	St. Catharines, Ont.
3.*J. A. McEachren,	Strathburn, Ont.
3. R. W. McElroy, B.A.Sc.,	Toronto, Ont.
3. H. J. McEwen, B.A.Sc.,	Toronto, Ont.
3.*W. G. McGhie, B.A.Sc., *Canadian Crocker-Wheeler Co.*	St. Catharines, Ont.
3. D. A. McKenzie, B.A.Sc., *With Hydro-Electric Power Comm.*	Toronto, Ont.
2. A. J. McLaren, B.A.Sc.,	Vancouver, B.C.
3. A. G. McLeish, *Calgary Power Co.*	Kananaskis, Alta.
1.*R. A. McLellan, B.A.Sc.,	Toronto, Ont.
2. W. B. McPherson, B.A.Sc., *Student at Law, Osgoode Hall.*	Toronto, Ont.
3. A. A. McQueen, B.A.Sc., *Power Dept., City Hall.*	Winnipeg, Man.
4.*H. H. Madill, B.A.Sc., *Demonstrator in Architecture, University of Toronto.*	Toronto, Ont.
3. J. C. Martin, B.A.Sc.,	Toronto, Ont.
3. C. A. Meadows, B.A.Sc., *With Dominion Bridge Co.*	Box 467, Lachine Locks, Que.
1. L. G. Mills, B.A.Sc.,	Toronto, Ont.
5. L. C. Mitchell,	Bay City, Mich.
2. J. A. Morphy, B.A.Sc.,	Toronto, Ont.
1. M. H. Murphy, B.A.Sc., *Contractor.*	Toronto, Ont.
3. E. H. Niebel, B.A.Sc., *Northern Electric and Manufacturing Co.*	Montreal, Que.
3. C. K. Nixon, B.A.Sc.,	Detroit, Mich.
3. E. S. Noble, B.A.Sc., *Canadian General Electric Co.*	Peterboro', Ont.
1. R. K. Northey, B.A.Sc., *Dominion Lime and Coal Co.*	Regina, Sask.
2. W. A. O'Flynn, B.A.Sc.,	
1. W. V. Oke, B.A.Sc.,	Toronto, Ont.
2. J. A. Orr, B.A.Sc.,	Toronto, Ont.
3. J. S. Parker, B.A.Sc.,	Burk's Falls, Ont.

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*Diploma with honours.

1911—*Continued.*

3.*J. H. Parkin, *Lecturer in Mechanical Engineering, University of Toronto.*	Toronto, Ont.
1.*J. McD. Patton, B.A.Sc.,	Toronto, Ont.
3. C. L. Pearson, *With Calgary Power Co.*	Kananaskis, Alta.
2. S. J. Pepler,	Huron St., Toronto, Ont.
3.*W. J. Perrin, B.A.Sc.,	Toronto, Ont.
1. B. W. Pick, B.A.Sc., *With Smith & Phillips.*	Regina, Sask.
3.*E. H. Porte,	Aylmer West, Ont.
1.*F. M. Pratt, B.A.Sc., *Res. Engineer, Const. Dept. E. B. Eddy Co.*	Ottawa, Ont.
4. H. Pullan, *With E. Pullan.*	Toronto, Ont.
1. L. J. Quinlan, B.A.Sc., *Topographical Surveys Branch, Dept. of Interior.*	Ottawa, Ont.
1. L. W. Railton, *P. G. E. Railway.*	Cheakamus, B.C.
1.*J. E. Ratz, B.A.Sc., *Dominion Observatory.*	Ottawa, Ont.
1. F. N. Read, B.A.Sc., *Supt. for T. W. Holsworth & Co.*	Kerrobert, Sask.
4. E. V. Reid, *Draftsman, Ross & Macdonald.*	Montreal, Que.
1.*W. A. Richardson, B.A.Sc., *Mackenzie, Mann & Co.*	Toronto, Ont.
1.*W. E. Robinson, B.A.Sc.,	Toronto, Ont.
1. H. L. Roblin, B.A.Sc.,	Toronto, Ont.
3. L. W. Rothery, B.A.Sc., *Allis-Chalmers Manufacturing Co.*	Milwaukee, Wis.
4.*T. L. F. Rowe, *Structural Engineer, Hospital for Insane.*	Whitby, Ont.
3. A. S. Runciman, *With Canadian Westinghouse Co.*	Calgary, Alta.
3. F. G. Rutley, B.A.Sc.	
1. E. M. Salter, *Draftsman, C.N.O. Ry.*	Nipigon, Ont.
1. F. R. Scandrett, B.A.Sc., *Fellow in Surveying, University of Toronto.*	Toronto, Ont.
5.*J. W. Scott, B.A.Sc., *Medical Health Dept.*	Toronto, Ont.
3. N. D. Seaton, B.A.Sc.,	Ida, Ont.
1. N. Sharpe, *With Allan Findlay, D.L.S., M.L.S.*	Winnipeg, Man.
4.*P. Sheard,	Toronto, Ont.
1.*W. A. Sibbett,	Bracebridge, Ont.
2.*C. P. Sills, B.A.Sc., *Department of the Interior.*	Ottawa, Ont.
1.*K. H. Smith, *Water Power Branch, Dept. of the Interior.*	Ottawa, Ont.
3. M. L. Smith, B.A.Sc., *Assoc. Editor, Maclean Pub. Co.*	Toronto, Ont.

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*Diploma with honours.

1911—*Continued.*

1.	R. G. Sneath, *Welland Canal Survey.*	Thorold, Ont.
3.*	G. E. Squire, B.A.Sc.,	Toronto, Ont.
3.	W. S. Steele, B.A.Sc., *Brooklyn Rapid Transit Co.*	Brooklyn, N.Y.
5.*	A. E. Stewart, B.A.Sc.,	Toronto, Ont.
3.*	R. O. Stewart, B.A.Sc., *Bridge Dept. Intercolonial Ry.*	Moncton, N.B.
3.*	R. A. Story, B.A.Sc., *B.C. Telephone Co.*	Vancouver, B.C.
1.	C. F. Szammers, *With Sherwood & Sherwood.*	Toronto, Ont.
3.	R. Taylor, B.A.Sc., *Demonstrator in Electrical Engineering, University of Toronto.*	Toronto, Ont.
1.	J. B. Temple, B.A.Sc., *Dominion Bridge Co.*	Montreal, Que.
3.	G. C. Thomas, *Assistant Manager, Simcoe Fruits, Ltd.*	Barrie, Ont.
1.	R. D. Torrance, B.A.Sc.,	London, Ont.
1.	W. G. Tough, B.A.Sc., *With Roman Stone Co.*	Toronto, Out.
1.*	N. Vickers,	North Battleford, Sask.
2.	J. H. C. Waite, B.A.Sc., *Comet Mine.*	Cobalt, Ont
1.	W. D. Walcott, B.A.Sc. *Roadways Dept., City Hall.*	Toronto, Ont.
3.	G. L. Wallace, B.A.Sc., *Demonstrator in Physics, University of Toronto.*	Toronto, Ont.
1.	A. Wardell, B.A.Sc.,	Toronto, Ont.
1.	F. E. Watson, B.A.Sc., *Demonstrator in Drawing, University of Toronto.*	Toronto, Ont.
3.*	P. G. Welford, B.A.Sc., *Hyatt Roller Bearing Co.*	Newark, N.J.
2.	A. G. Wheler, B.A.Sc., *Sec'y-Treas. J. R. Wheler Sons Co.*	Norfolk, Va.
3.	G. H. Wilkes, B.A.Sc., *With Massey-Harris Co.*	Toronto, Ont.
5.*	E. R. Williams, *Metallurgist, Northern Aluminium Co.*	Shawenegan Falls, Que.
3.*	H. A. Wilson, *Supt., J. C. Wilson & Co., Mechanical Engineers.*	Glenora, Ont.
3.	C. S. Wood, *Electrical Engineer.*	Courtenay, B.C.
1.	W. G. Worden, B.A.Sc., *Hydrographic Survey.*	Lac Du Bonnet, Man.
1.*	W. J. T. Wright, B.A.Sc., *Demonstrator in Drawing, University of Toronto.*	Toronto, Ont.
1.	F. H. Wrong, D.L.S.,	Sandwich, Ont.
2.	W. H. Wylie, B.A.Sc., *Hollinger-Timmins Mine.*	Timmins, Ont.
3.	H. K. Wyman, *Canadian General Electric Co.*	Peterboro, Ont.

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*Diploma with honours

1911—*Continued.*

3. L. P. Yorke, Edmonton, Alta.
Wiring Inspector, City of Edmonton.
1. S. Young, B.A.Sc., D. & S.L.S., Regina, Sask.
Public Works Dept.
3.*A. Young, B.A.Sc., Toronto, Ont.
Instructor, Technical High School.
1. W. E. Zinkan, Southampton, Ont.
Dominion Land Surveyor.

Owing to change of course from three to four years, there were no graduates in 1912.

1913.

7.*R. J Allen, B.A.Sc., Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
3.*A. S. Anderson, B.A.Sc., Toronto, Ont.
Public Works Dept.
1.*C. R. Avery, B.A.Sc., Toronto, Ont.
Public Health Dept.
4.*L. C. M. Baldwin, B.A.Sc., England.
First Canadian Contingent, Expeditionary Force.
1. F. W. Beatty, B.A.Sc. Pembroke, Ont.
1.*W. B. Beatty, B.A.Sc., O.L.S., Sarnia, Ont.
2. C. A. Bell, England.
First Canadian Contingent, Expeditionary Force.
1.*B. S. Black, B.A.Sc.
1. D. Blain, B.A.Sc., Toronto, Ont.
Draftsman, Canada Foundry Co.
7. E. R. Bonter, B.A.Sc., Montreal, Que.
Crocker-Wheeler Co.
7.*L. R. Brereton, B.A.Sc.,
2. T. R. Buchanan, B.A.Sc., Sudbury, Ont.
Creighton Mine.
7.*W. B. Buchanan, B.A.Sc. Toronto, Ont.
Demonstrator in Electrical Engineering, University of Toronto.
3. B. H. A. Burrows, B.A.Sc., Toronto, Ont.
Can. Allis-Chalmers, Ltd.
2. W. B. Caldwell, B.A.Sc., Toronto, Ont.
1. O. L. Cameron, B.A.Sc.
1. L. L. Campbell, B.A.Sc.
3.*R. M. Carmichael, B.A.Sc., Kenora, Ont.
1. G. M. Carrie, B.A.Sc.
2. H. A. Clark, B.A.Sc., Toronto, Ont.
6.*G. E. Clarkson, B.A.Sc., Toronto.
Parker's Dye Works.
3.*B. D. Clegg, B.A.Sc., Peterboro, Ont.
7. J. H. Coleman, B.A.Sc., 17 Farnham Ave., Toronto, Ont
1.*G. M. Cook, B.A.Sc., Detroit, Mich.
Trussed Concrete Steel Co.
4.*B. R. Coon, B.A.Sc., Temple Bldg., Toronto.
Architect.
2. W. T. Curtis, B.A.Sc., Timmins, Ont.
Hollinginer Mine.
1. A. J. Dates, B.A.Sc., Detroit, Mich.
State Ry. Com. of Michigan.

Honours in Final Year.

1913—*Continued.*

3. H. D. DAVISON, B.A.Sc.	
7. E. L. DEITCH, B.A.Sc., *Hydro-Electric Power Comm.*	Toronto, Ont.
2.*R. W. DIAMOND, B.A.Sc., *Anaconda Mining Co.*	Anaconda Mont.
7. W. G. DUNCAN, B.A.Sc.	Port Dover, Ont.
1. F. R. FIDDES, B.A.Sc.	
1. D. H. FLEMING, B.A.Sc., *Sewers Dept. City Hall.*	Toronto, Ont.
3. F. F. FOOTE, B.A.Sc.	St. Catharines, Ont.
1.*J. S. GALBRAITH, B.A.Sc., *Demonstrator in Drawing, University of Toronto.*	Toronto Ont.
2. W. H. GARNHAM, B.A.Sc.	
1. A. M. GERMAN, B.A.Sc.	
1. H. M. GOODMAN, B.A.Sc.,	Toronto, Ont.
1. A. G. GRAY, B.A.Sc., *First Canadian Contingent, Expeditionary Force.*	England.
1.*E. R. GRAY, B.A.Sc. *Divisional Engineer, City Sewer Dept.*	Toronto, Ont.
3. A. J. Gray, B.A.Sc.	
7. J. P. HADCOCK, B.A.Sc., *Can. Gen. Elec. Co.*	Peterboro, Ont.
1. H. A. HAWLEY, B.A.Sc., *Lewis Construction Co.*	Toronto.
7. H. C. HARRIS.	
1.*R. L. HEARN, B.A.Sc., *Hydro-Electric Power Com.*	Toronto, Ont.
1.*H. J. HEINONEN, B.A.Sc., *Columbia University.*	New York, N.Y.
1.*R. A. HENRY, B.A.Sc.,	Barrie, Ont.
7.*T. A. HILL, B.A.Sc.,	Ninga, Man.
1.*O. HOLDEN, B.A.Sc., *Hydro Power Com.*	Toronto, Ont.
1. J. T. HOWARD, B.A.Sc., *Demonstrator in Drawing, University of Toronto.*	Toronto, Ont.
7.*T. F. HOWLETT, B.A.Sc.,	Howlett, Ont.
1. E T. IRESON, B.A.Sc.	
1. G. R. JOHNSON, B.A.Sc.,	Fernie, B.C.
1. R. L. JUNKIN, B.A.Sc.	
7.*S. S. KELLY,	Lambeth.
7. A. E. KERR, B.A.Sc., *Can. Westinghouse Co.*	Hamilton, Ont.
7. C. E. KILMER,	Toronto.
1. J. S. LAING, B.A.Sc. *With Town Engineer.*	Galt, Ont.
4.*H. D. LIVINGSTON, B.A.Sc.	
1.*K. F. MICKLEBOROUGH, B.A.Sc.,	Cornwall, Ont.
7.*G. J. MICKLER, B.A.Sc., *Hydro-Electric Commission.*	Toronto, Ont.
1. N. C. MILLMAN, B.A.Sc.	
1. F. J. MULQUEEN, B.A.Sc., *First Canadian Contingent.*	France.
1.*W. C. MURDIE, M.A.Sc.,	Toronto, Ont.
2. D. A. S. MUTCH, B.A.Sc., *Dome Mines.*	Porcupine, Ont.

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* Honours in Final Year.

1913—*Continued.*

1.*H. R. Mackenzie, B.A.Sc., Regina, Sask.
Inspecting Engineer, Board of Highway Commissioners.
1. A. R. MacPherson, B.A.Sc.
6.*K. S. MacLachlan, B.A.Sc., Welland, Ont.
Supt., Metals-Chemical Co.
1. W. H. MacTavish, B.A.Sc.
1. T. V. McCarthy, B.A.Sc., Toronto, Ont.
Waterworks Dept., City Hall.
4.*R. S. McConnell, B.A.Sc.
1. W. L. McFaul, B.A.Sc.
2.*K. L. Newton, B.A.Sc., Copper Cliff, Ont.
Canadian Copper Co.
5.*C. J. Otto, B.A.Sc.
1.*N. F. Parkinson, B.A.Sc., Toronto, Ont.
Public Health Dept.
7.*J. W. Peart, B.A.Sc.
1.*E. Perron, B.A.Sc.
1. H. C. Quail, B.A.Sc.
7.*E. G. Ratz, Hamilton, Ont.
With Canadian Westinghouse Co.
1.*J. M. Riddell, B.A.Sc.
1.*J. E. Ritchie, B.A.Sc., Toronto, Ont.
Secretary, Engineering Society, University of Toronto.
1.*C. S. Robertson, B.A.Sc., Toronto, Ont.
Public Health Dept.
7.*C. C. Rous, B.A.Sc.
7. C. H. Russell, B.A.Sc., Hamilton, Ont.
Can. Westinghouse Co.
7.*A. A. Scarlett, B.A.Sc.
1.*L. Sewell, B.A.Sc.
7.*M. C. Sharp, B.A.Sc., Toronto, Ont.
York Co. Roadway Dept.
3.*K. E. Shaw, B.A.Sc.
3.*F. R. Sims, B.A.Sc., Ottawa, Ont.
Dept. of Customs.
2.*D. G. Sinclair, B.A.Sc., Copper Cliff, Ont.
Canadian Copper Co.
4.*R. W. Soper, B.A.Sc.
1. W. A. Spellman, B.A.Sc., Toronto, Ont.
City Engineer's Dept.
7.*J. M. Strathy, B.A.Sc.
Corporal, 2nd Field Co., Second Contingent, Canadian Engineers.
1.*J. M. Thompson, B.A.Sc., Hamilton, Ont.
Hamilton Bridge Co.
2.*W. K. Thompson, B.A.Sc. Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.
7.*D. J. Thomson, Toronto, Ont.
Demonstrator in Mechanical Engineering, University of Toronto.
7. T. E. Torrance, B.A.Sc., Toronto.
Bell Telephone Co.
2 R. M. Trow, B.A.Sc.
1 *W. G. Ure, B.A.Sc.
1.*C. F. von Gunten, B.A.Sc., 17 Indian Rd. Cres., Toronto, Ont.
3. R. E. Watts, B.A.Sc., St. Catharines, Ont.
Welland Canal.
3.*C. A. Webster, B.A.Sc., Galt, Ont.
Sheldons, Limited.

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* Honours in Final Year

1913—*Continued.*

4.*H. WEBSTER, B.A.Sc.,	Toronto.
1. D. H. WEIR, B.A.Sc.	
1. W. S. WINTERS, B.A.Sc.	
1. R. F. B. WOOD, B.A.Sc., *With T. & L. M. Wood.*	Toronto, Ont.
7.*A. J. WRIGHT, B.A.Sc., *Toronto Hydro-Electric System.*	Toronto, Ont
7. R. B. YOUNG, B.A.Sc.	

1914

1.*F. C. ADSETT, B.A.Sc.,	Guelph, Ont.
1.*J. L. ALTON, B.A.Sc., *Dept. of Public Works for Ontario.*	Toronto, Ont.
2.*F. C. ANDREWS, B.A.Sc., *With British Army.*	France.
7. C. E. ARMER, B.A.Sc.	
2.*H. R. BANKS, B.A.Sc.	
1. E. L. BEDARD, B.A.Sc.	
1.*H. J. BEDARD, B.A.Sc.	
1. J. T. BELCHER, B.A.Sc.	
1. S. G. BENNETT, B.A.Sc., *Post-Graduate Course, Oxford University.*	**Oxford, England.**
1. P. V. BINNS, B.A.Sc., *Hydro Electric Power Commission.*	Kenora, Ont.
1.*J. M. BLYTH, B.A.Sc.	
5. A. R. BONHAM, B.A.Sc.	
1.*J. H. W. BOWER, B.A.Sc.	
3.*H. H. BROWN, B.A.Sc.,	Buffalo, N.Y.
7.*W. D. BROWN, B.A.Sc.	
1.*D. H. CAMPBELL, B.A.Sc.	
3.*H. M. CAMPBELL, B.A.Sc., *Welland Ship Canal.*	Welland, Ont.
1.*J. J. CAMPBELL, B.A.Sc., *With Frank Chipman.*	Toronto, Ont.
6.*C. N. CANDEE, B.A.Sc., *Synthetic Drug Co.*	Toronto, Ont.
2. R. T. CARLYLE, B.A.Sc.	
2. J. M. CARTER, B.A.Sc.,	Cobalt, Ont.
2. E. V. CHAMBERS, B.A.Sc.	
1.*R. M. CHRISTIE, B.A.Sc.	
3. K. M. CLIPSHAM, B.A.Sc., *Clipsham & Delamere.*	Toronto, Ont.
7.*A. W. CRAWFORD, B.A.Sc., *Second Canadian Contingent.*	England.
1.*W. CUTHBERTSON, B.A.Sc., *Toronto-Hamilton Good Roads Commission.*	Toronto, Ont.
1. G. F. DALTON, B.A.Sc.	
1.*R. DASHWOOD, B.A.Sc.	
1.*R. D. DAVIDSON, B.A.Sc., *With A. H. Hawkins, D.L.S.*	Le Pas, Man.
3. R. D. DELAMERE, B.A.Sc., *Clipsham & Delamere.*	Toronto, Ont.
1.*F. W. DOUGLAS, B.A.Sc.	
7. H. C. EDWARDS, B.A.Sc.	
1. J. A. ELLIOTT, B.A.Sc.	
2.*S. D. ELLIS, B.A.Sc., *With British Army.*	France.

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* Diploma with honours.

1914—*Continued.*

1.*H. E. Eyres, B.A.Sc.
1.*O. M. Falls, B.A.Sc.
7. D. G. Ferguson, B.A.Sc., Toronto, Ont.
Hydro Electric Power Commission.
1. G. O. Fleming, B.A.Sc., Toronto, Ont.
1.*J. L. Foreman, B.A.Sc.
7.*H. J. Franklin, B.A.Sc., 74 Dewson St., Toronto, Ont.
5.*J. G. G. Frost, B.A.Sc., Welland, Ont.
Asst. Chemist, Metals-Chemical Co.
1. C. H. R. Fuller, B.A.Sc., Toronto, Ont.
Toronto-Hamilton Good Roads Commission.
7.*E. I. Gill, B.A.Sc.
2.*J. R. Gill, B.A.Sc.
1. R. W. Gouinlock, B.A.Sc.
7. C. I. Grierson, B.A.Sc.
3.*W. H. Hall, B.A.Sc.
3.*G. H. Hally, B.A.Sc., Toronto, Ont.
Demonstrator in Mechanical Engineering, University of Toronto.
1.*J. J. Hanna, B.A.Sc., England.
First Canadian Contingent, Expeditionary Force.
1. J. H. Hawes, B.A.Sc.
1.*L. T. Hayman, B.A.Sc.
1.*B. B. Hogarth, B.A.Sc.
4. E. E. H. Hugli, B.A.Sc.
1.*S. A. Hustwitt, B.A.Sc., St. Catharines, Ont.
Welland Ship Canal Office.
7.*A. S. Jannati, B.A.Sc., Toronto, Ont.
Winter & Joiner Co.
1.*R. P. Johnson, B.A.Sc., Toronto, Ont.
Welland Ship Canal.
7.*J. I. Kamman.
1. J. Kay, England.
First Canadian Contingent, Expeditionary Force.
4. N. G. Keefer, B.A.Sc.
3. H. S. Kerby, B.A.Sc., England.
Aviation Corps, British Army.
3. J. A. Kerr, B.A.Sc., Toronto, Ont.
Water Works Dept.
7. G. E. Kewin, B.A.Sc.
1. J. A. Knight, B.A.Sc.
2.*S. A. Lang, B.A.Sc., Rancagua, Chili.
With the Braden Copper Co.
7.*C. W. Latimer, B.A.Sc.
1.*R. E. Lindsay, B.A.Sc.
7. N. H. Lorimer, B.A.Sc., Toronto, Ont.
Otis-Fensom Elevator Co.
5.*O. G. Lye, B.A.Sc., Toronto, Ont.
Chemist, Experimental Station, Provincial Board of Health.
2.*W. A. Macdonald, B.A.Sc., Porcupine, Ont.
2.*H. J. MacKenzie, B.A.Sc.
7.*A. M. Mackenzie, B.A.Sc.
1. H. N. Macpherson, B.A.Sc.
7. J. A. Marshall, B.A.Sc.
1.*J. A. P. Marshall, B.A.Sc., Toronto, Ont.
Dept. of Public Works for Ontario.

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* Diploma with honours.

1914—*Continued.*

7.*R. G. Matthews, B.A.Sc. Toronto, Ont.
Toronto Hydro Electric.
3.*H. W. Maxwell, B.A.Sc.
1.*R. C. McDonald, B.A.Sc.
7. D. L. McLaren, B.A.Sc.
1.*F. C. Mechin, B.A.Sc. Toronto, Ont.
Fellow in Drawing, University of Toronto.
1.*W. G. Millar, B.A.Sc. Newmarket, Ont.
1. A. S. Miller, B.A.Sc.
6.*W. E. Milligan, B.A.Sc., Rancagua, Chili.
With the Braden Copper Co.
1.*J. S. Mitchell, B.A.Sc., Toronto, Ont.
Demonstrator in Applied Mechanics, University of Toronto.
1. J. R. Montague, B.A.Sc.
6. D. Morrison, B.A.Sc.
1 G. J. Mullins, B.A.Sc.
1.*E. P. Muntz, B.A.Sc., St. Catharines, Ont.
Welland Ship Canal Office.
7.*C. L. Nicholson, B.A.Sc.
1.*J. B. Nicholson, B.A.Sc.
1.*C. Noecker, B.A.Sc. Berlin, Ont.
1. J. A. Owens, B.A.Sc.
1.*R. G. Patterson, B.A.Sc.
7.*J. D. Peart, B.A.Sc.
1. C. W. Pennington, B.A.Sc.
1.*C. V. Perry, B.A.Sc. Iroquois Falls, Ont.
With Beatty and Morrow.
5.*W. E. Phillips, B.A.Sc. France.
With British Lrmy.
8. G. O. Philp, B.A.Sc.
1. P. H. Raney, B.A.Sc. Toronto, Ont
1. R. H. Rice, B.A.Sc.
7. A. S. Robertson, B.A.Sc.
4.*J. M. Robertson, B.A.Sc. England.
2nd Canadian Contingent.
7. H. D. Rothwell, B.A.Sc. Toronto, Ont.
Hydro-Electric Power Comm.
1. F. S. Rutherford, B.A.Sc., England
First Canadian Contingent, Expeditionary Force.
7.*F. M. Servos, B.A.Sc.
1.*H. L. Sheppard, B.A.Sc.
1. N. E. D. Sheppard, B.A.Sc.
1. S. Shupe, B.A.Sc.
6. A. W. Sime, B.A.Sc.
1.*B. N. Simpson, B.A.Sc.
1. C. E. Sinclair, B.A.Sc.
1.*J. B. Skaith, B.A.Sc. Toronto, Ont.
4.*W. C. Skinner, B.A.Sc. Toronto, Ont.
1. H. M. Smith, B.A.Sc.
1.*N. L. Somers, B.A.Sc.
7.*E. C. R. Stoneman, B.A.Sc.
1. J. R. Strome, B.A.Sc. Calgary, Alta.
Irrigation Office, Dept. of Interior.
2. J. S. Tayllr, B.A.Sc. Porcupine, Ont.
1.*C. N. Temes, B.A.Sc.

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* Diploma with honours.

1914—*Continued.*

3.*E. H. Tennent, B.A.Sc.	
1. J. A. Tilston, B.A.Sc.	Toronto, Ont.
1.*G. E. Treloar, B.A.Sc.	
6. E. A. Twidale, B.A.Sc.	
1.*F. T. VanDyke, B.A.Sc.	Grimsby, Ont.
3.*M. F. Verity, B.A.Sc.	
1.*H. O. Waddell, B.A.Sc.	
1.*H. W. Wagner, B.A.Sc.	
1.*H. D. M. Wallace, B.A.Sc., *Welland Ship Canal Office.*	St. Catharines, Ont.
1. P. L. Whitley, B.A.Sc.	
6.*A. E. Wigle, B.A.Sc.	
7.*J. A. H. Wigle, B.A.Sc.	Kingsville, Ont.
4.*A. C. Wilson, B.A.Sc., *Fellow in Physics, University of Toronto.*	Toronto, Ont.
1. H. P. Wilson, B.A.Sc.	
2.*R. W. Young, B.A.Sc.	

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* Diploma with honours.

CERTIFICATES.

MINERALOGY AND ASSAYING.

1896. G. JOHNSTON.
1897. E. B. WEBSTER.
1901. G. A. HUNT.

ELECTRICITY.

1896. A. T. TYE, c/o Empresa Hanseatica, Barranquilla, Columbia, South America.
1898. A. N. MCMILLAN, Penetanguishene, Ont.
1900. A. H. SMITH.
1896. E. I. SIFTON, London, Ont.
Manager, London Electric Construction Co.
1903. W. ELWELL (deceased).

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

A

Acres, H. G.	1903
Adams, J. H.	1910
Adams, O. F.	1910
Adsett, F. C.	1914
Aitken, J.	1911
Akers, H. G.	1908
Alexander, J. H.	1904
Alison, T. H.	1892
Alison, J. G. R.	1903
Allan, J. R.	1892
Allan, J. L.	1900
Allan, L. F.	1908
Allan, L. B.	1911
Allen, F. G.	1907
Allen, R. J.	1913
Allison, C. B.	1908
Alport, F.	1906
Alton, J. L.	1914
Amos, W. L.	1906
Amsden, W. G.	1910
Anderson, A. G.	1892
Anderson, F. J.	1907
Anderson, R. M.	1908
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Andrews, E.	1897
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Angus, H. H.	1903
Angus, R. W.	1894
Apsey, J. F.	1888
Archer, E. G.	1911
Ardagh, A. G.	1893
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Arens, A. H.	1906
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Armer, C. E.	1914
Armer, J. C.	1906
Armour, R. H.	1905
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Armstrong, H. V.	1909
Ashbridge, W. T.	1888
Augustine, A. P.	1907
Austin, E. T.	1909
Avery, C. R.	1913
Aylesworth, C. B.	1905

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Badgley, L. A.	1911
Bain, J. A.	1900
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Baird, J. A.	1910
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Baker, M. H.	1906
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Ball, E. F.	1888
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Banting, E. W.	1906
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Barber, W.	1905
Barber, F.	1906
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Barnett, H. A.	1910
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Barrett, J. H.	1904
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Bartlett, E.	1908
Bartley, T. H.	1911
Bates, M. (deceased).	1906
Batten, H. L.	1911
Beatty, F. W.	1913
Beatty, W. B.	1913
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Bedard, E. L.	1914
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Bedford, F. J.	1908
Begg, W. A.	1905
Beith, R. E.	1909
Belcher, J. T.	1914
Bell, C. A.	1913
Bell, G. G.	1905–1908
Bellisle, J. P. (deceased).	1906
Bennett, G. A.	1909
Bennett, S. G.	1914

Bergey, A. E	1894
Berkeley, G. L	1911
Berry, E. W	1910
Bertram, G. M	1910
Betts, H. H	1906
Beynon, D. E	1906
Billings, J. H	1911
Bingham, H. C	1910
Binns, P. V	1914
Birchard, E. R	1909
Bissett, D. G	1910
Bissett, G. W	1906
Bissett, J. R	1911
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Blyth, J. M	1914
Boeckh, J. C	1906
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Bonnell, M. B	1904
Bonter, E. R	1913
Boswell, E. J	1895
Boswell, M. C	1900
Boswell, W. A	1911
Boulton, W. J	1909
Boustead, W. E. (deceased)	1890
Bow, J. A	1897
Bowen, G. H	1909
Bower, J. H. W	1914
Bowers, W. J. (deceased)	1901
Bowes, H. F	1908
Bowman, E. P	1910
Bowman, H. J	1885
Bowman, H. D	1907
Bowman, F. M	1890
Bowman, A. M	1886
Bowman, F	1911
Boyd, D. G	1894
Boyd, W. H	1898
Brace, J. H	1908
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Brady, W. S	1907
Brandon, E. T. J	1901
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Bray, L. T	1900
Brebner, G. (deceased)	1895
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Brock, A. F	1910
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Broughton, J. T	1902
Brouse, W. H. D	1911
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Brown, L. L	1895
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Brown, E. I	1908
Brown, H	1911
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Browne, E. W	1909
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Bryce, W. F. M	1908
Buchan, P. H	1908
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Burley, R. J	1904
Burns, D	1883
Burns, J. C. (deceased)	1887
Burns, J. E	1909
Burnham, F. W	1904
Burnham, N. G. H. (deceased)	1910
Burnside, J. T. M	1899
Burrows, B. H. A	1913
Burwash, L. T	1896
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Byam, F. M	1906

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Calder, J. W	1904
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Campbell, A. J	1904
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Campbell, H. M	1914
Campbell, J. J	1914
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Campbell, N. A	1908
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Carter, J. M	1914
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Chewett, H. J	1888
Chilver, C. A	1904
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Christie, W	1902
Christie, U. W	1904
Christie, A. G	1901
Christie, R. M	1914
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Clark, G. T	1906
Clark, F. W	1911
Clark, H. J	1911
Clarke, F. F	1903
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Claveau, J. A	1910
Cleary, F. S. (deceased)	1911
Clegg, B. D	1913
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Cline, C. G	1909
Clipsham, K. M	1914
Clothier, G. A	1899
Coates, P. C	1904
Cockburn, J. R	1901
Cockburn, L. S	1910
Code, A. G	1910
Code, S. B	1904
Code, T. F. (deceased)	1904
Cole, D. B	1911
Cole, W. E. (deceased)	1908
Cole, C. R	1910
Coleman, J. H	1913
Colhoun, G. A	1906
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Colquhoun, G. A	1910
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Conlon, F. T	1902
Connell, C. B. B	1907
Connor, H. V	1902
Connor, A. W	1895
Cooch, H. A	1909
Cook, A. S	1911
Cook, G. M	1913
Cook, W. A. Mc	1906
Coon, B. R	1913
Cooper, C	1899
Corman, W. E	1909
Cornell, C. W	1911
Corrigan, G. D. (deceased)	1890
Corrigan, T. E	1905
Cory, R. Y	1908
Coulson, C. L	1903
Cousins, E. L	1906
Coulthard, R. M	1899
Cowan, W. A	1904
Cowper, G. C	1907
Coyne, H	1908

Craig, J. A.	1899
Craig, J. H.	1910
Craig, S. E.	1904
Crawford, A. W.	1914
Creighton, A. G.	1906
Crerar, S. R.	1904
Crosby, N. L. R.	1905
Crosby, T. H.	1909
Crouch, M. E.	1911
Cruthers, W. M.	1911
Culbert, M. T. (deceased)	1902
Culbert, J. V.	1907
Cumming, R.	1902
Cumming, J. D.	1908
Cummins, O. F.	1911
Cunerty, T. J.	1911
Cunningham, C. H.	1911
Cunningham, R. H.	1909
Currie, W. M.	1904
Curtis, W. T.	1913
Curzon, J. H.	1911
Cuthbertson, W.	1914

D

Dahl, A. D.	1908
Dallyn, F. A.	1909
D'Alton, F. K.	1911
Dalton, G. F.	1914
Daniels, W. N.	1906
Danks, F. A.	1908
Danks, C. N.	1909
Dann, E. M.	1909
Darling, E. H.	1898
Darroch, J.	1908
Dashwood, R.	1914
Dates, A. J.	1913
Davidson, R. D.	1914
Davis, R.	1907
Davis, A. I.	1909
Davis, H. W.	1909
Davis, H. C.	1909
Davis, W. B.	1911
Davison, J. E.	1900
Davison, A. E.	1903
Dawson, I. H.	1909
Deacon, T. R.	1891
Dean, C. D.	1910
Death, N. P. F.	1906
DeCew, J. A.	1896
De Guerre, F. C.	1911
Deitch, E. L.	1913
Delahaye, W. H.	1909
Delamere, R. D.	1914
De Laporte, A. V.	1910
Depew, H. H.	1904
Derham, W. P.	1909
Diamond, R. W.	1913
Dickson, G. W.	1900
Dickinson, E. D.	1900
Dill, C. W.	1891
Dixon, H. A.	1900
Dobbin, R. L.	1910
Dobson, W. P.	1910
Dobie, J. S.	1895
Dodds, W. A.	1909
Doorly, H. C. (deceased)	1908
Douglas, F. W.	1914
Douglas, R. H.	1908, 1909
Douglas, W. E.	1902
Downing, F. H.	1911
Duff, J. A. (deceased)	1890
Duff, W. A.	1901
Duggan, G. H.	1883
Dunbar, W. B.	1911
Duncan, J. M.	1910
Duncan, W. G.	1913
Dundass, C. S.	1906
Dunlop, R. J.	1902
Dunn, T. H.	1893
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E

Eagleson, F. M.	1908
Eason, D. E.	1901
Eckert, C. H.	1911
Edwards, W. M.	1902
Edwards, C.	1908
Edwards, H. C.	1914
Elder, A. J.	1904
Elliot, J. A.	1911
Elliott, J. A.	1914
Elliott, G. R.	1911
Elliott, C. F.	1911
Elliott, H. P.	1896
Elliott, J. C.	1899
Ellis, S. D.	1914
Elwell, W. (deceased)	1902
Emery, V. H.	1910
Empey, J. M.	1902
English, A. B. (deceased)	1890
Evans, S. D.	1907
Evans, S. L.	1908
Evans, W. J.	1910
Ewart, J. A.	1894
Ewart, F. R.	1907
Ewing, E. O.	1908
Eyres, H. E.	1914

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Fairlie, H. W.	1910
Falconer, F. S.	1909
Falls, O. M.	1914
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Farrelly, T. J.	1911
Fear, S. L.	1906
Fensom, C. J.	1903
Ferguson, C. R.	1910
Ferguson, D. G.	1914
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Flint, C.	1908
Flint, T. R. C.	1910
Flook, S. E.	1911
Flynn, C. C.	1911
Follett, R. C.	1910
Foote, F. F.	1913
Forbes, D. L. H.	1902
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Foreman, J. M.	1910
Forrester, C.	1893
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Forward, E. A.	1897
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Fraser, A.	1910
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Freeman, T. E.	1909
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Frid, H. P.	1911
Frost, E. R.	1909
Frost, J. G. G.	1914
Fuce, E. O.	1903
Fuller, C. H. R.	1914
Fuller, R. J.	1911
Fullerton, C. H.	1900
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Galbraith, J. S.	1913
Gall, H.	1910
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Garrow, A. B.	1907
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Gibson, A. E.	1902
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Gillespie, P.	1903
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Glover, A. E.	1909
Goad, V. A. E.	1910
Goldie, A. R.	1893
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Gooderham, A. E.	1909
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Goodeve, V. S.	1910
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Goodwin, A. C.	1902
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Gordon, W. A.	1910
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Graham, G. W.	1907
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Grasett, C. S.	1907
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Gray, E. R.	1913
Gray, W. W	1904
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Greene, P. W	1906
Greene, G. E. D	1909
Greene, R. L	1910
Greene, W. H	1909
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Grierson, C. I	1914
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Gulley, C. L	1908
Gunn, W. W	1909
Gurney, W. C	1896
Guest, W. S	1900
Guy, E	1899

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Hadcock, J. P	1913
Hagarty, R. E. W	1907
Haight, H. V	1896
Hall, H. G	1911
Hall, K	1907
Hall, W. H	1914
Hally, G. H	1914
Hamer, A. T. E	1901
Hamilton, J. F	1903
Hamilton, C. B	1906
Hamilton, C. T	1907
Hamilton, G. M	1911
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Hara, L. D	1904
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Harper, C. J	1909
Harris, C. J	1904
Harris, J. H	1910
Harris, H. C	1913
Harrison, R. L	1906
Harrison, F. W	1905
Harrison, E	1906
Hartney, J. C	1906
Harvey, C	1901
Harvey, D. W	1909
Harvie, N. J	1910
Haultain, H. E. T	1889
Haviland, F. L	1908
Hawes, J. H	1914
Hawley, H. A	1913
Hay, C. O	1909
Hayes, L. J	1903
Hayman, L. T	1914
Hearn, R. L	1913
Heebner, M. B	1911
Heinonen, H. J	1913
Helliwell, J. G	1910
Helson, F. I	1901
Hemphill, W	1900
Hemphill, J	1909
Henderson, E. E	1885
Henderson, F. D	1903
Henderson, J. F	1910
Henderson, S. E M	1900
Henderson, C. D	1908
Hendry, M. C	1905
Henry, J. A	1900
Henry, R. A	1913
Henwood, C	1902
Herald, W. J	1894
Hermon, E. B	1886
Heron, J. B	1904
Hertzberg, C. S. L	1905
Hertzberg, H. F. H	1907
Hett, S	1906
Hewson, W. G	1905
Hickling, F. G	1910
Hicks, W. A. B	1897
Hill, E. M. M	1904
Hill, S. N	1904
Hill, H. O	1907
Hill, H. R	1911
Hill, T. A	1913
Hillis, C. R	1906
Hogarth, B. B	1914
Hogarth, G	1909
Hogg, T. H	1907
Holcroft, H. S	1900
Holden, O	1913
Holmes, A. E	1909
Holmes, C. R	1909
Hookway, C. W	1906
Hoover, O. H	1910
Hopkins, P. E	1910
Hopkins, R. H	1906
Horton, J. A	1903
Hoshal, G. C	1909
Houston, R. S	1906
Howard, J. T	1913
Howlett, T. F	1913

Huber, W.	1906
Huether, D. J	1908
Huether, A. D	1908
Huff, A. J	1911
Huffman, K	1911
Hughes, C	1909
Hugli, E. E. H	1914
Hull, H. S	1895
Hull, A. H	1906
Hunter, A. E. (deceased)	1909
Hunter, A. N	1908
Hustwitt, S. A	1914
Hutcheon, J	1890
Hutton, C. H	1907
Hyatt, H	1911
Hyland, H. M	1907
Hyman, E. W	1907

I

Iler, S. B	1908
Ingles, C. J	1904
Innes, W. L	1890
Ireland, L. G	1907
Ireson, E. T	1913
Irvine, J	1889
Irwin, H	1909
Irwin, W. J	1910
Isbister, J	1909

J

Jackes, F. P	1909
Jackson, J. G	1903
Jackson, F. C	1901
Jackson, W	1907
Jackson, C. B	1907
Jackson, J. E	1909
James, O. S	1891
James, D. D	1889
James, E. A	1904
James, E. W	1909
James, F. L	1910
Jannati, A. S	1914
Jarvis, R. H	1911
Jepson, W. C	1906
Jeffrey, D	1882
Jermyn, P. V	1904
Job, H. E	1894
Johnson, C. C	1909
Johnson, R. P	1914
Johnston, D. M	1902
Johnston, H	1903
Johnston, H. C	1910
Johnston, A. C	1894
Johnston, S. M	1894
Johnston, H. A	1900
Johnston, J. C	1900
Johnston, J. A	1900
Johnston, C. K	1903
Johnston, R. H	1910
Johnston, W. J	1909
Johnston, C	1906
Johnston, C. E	1909
Johnston, J. T	1908
Jones, J. E	1894
Jones, L. E	1911
Jones, G. S	1905
Jones, G. R	1906
Jones, T	1906
Jupp, A. E	1906
Junkin, R. L	1913

K

Kamman, J. I	1914
Kay, J	1914
Kay, E. W	1907
Keefe, W. S. H	1904
Keefer, N. G	1914
Keele, J	1893
Keffer, A. H. E	1909
Keith, J. C	1910
Keith, D. F	1907
Keith, H. P	1907
Kelly, E. A	1911
Kelly, S. S	1913
Kemp, J. B. O	1909
Kennedy, J. H	1882
Kennedy, H. G	1908
Keppy, J. D	1906
Kerby, H. S	1914
Kerr, A. E	1913
Kerr, J. A	1914
Kewin, G. E	1914
Key, W. R	1909
Keys, W. R	1908
Kilmer, C. E	1913
King, C. F	1897
King, J. T	1910
Kinghorn, A. A	1907
Kingstone, G. A	1910
Kirkland, W. C	1884
Kirkwood, M	1911
Kirwan, G. L	1910
Kirwan, P. T	1910
Klingner, L. W	1907
Klotz, H. N	1909
Knight, R. H	1902
Knight, J. A	1914
Knight, S	1910
Kormann, J. S	1898
Kribs, G	1905

L

Laidlaw, J. T.	1893
Laidlaw, R. A.	1901
Laing, W. F. (deceased)	1896
Laing, A. T.	1892
Laing, J. S.	1913
Laing, P. A.	1905
Laird, R.	1886
Lamb, F. C.	1907
Lamont, A. W.	1909
Lane, A. (deceased)	1891
Lang, A. G.	1903
Lang, J. L.	1906
Lang, S. A.	1914
Langley, C. E.	1892
Langmuir, F. L.	1902
Langmuir, C. B.	1909
Lanning, J.	1911
Larkworthy, W. J. (deceased)	1904
Laschinger, E. J.	1892
Lash, F. L.	1893
Lash, N. M.	1894
Latham, R.	1899
Latimer, C. W.	1914
Latornell, A. J.	1903
Latornell, A.	1905
Lavrock, J. E.	1898
Lawler, E. R.	1910
Lawson, W. L.	1892
Lawrie, R. R. (deceased)	1896
Leaver, C. B.	1910
Lee, W. A. (deceased)	1892
Lee, R. G.	1910
Leighton, J. W.	1905
Leitch, J. N. (deceased)	1910
Lennox, A. E.	1909
LePan, A. D.	1907
Leslie, J. N. M.	1908
Lewis, F. C.	1908
Lieberman, M.	1911
Lillie, G. L.	1911
Lindsay, J. H.	1907
Lindsay, R. E.	1914
Linton, A. P.	1906
Livingston, H. D.	1913
Lloyd, N. C. A.	1909
Long, A. L.	1911
Longstaff, J. C.	1910
Lorimer, N. H.	1914
Lott, A. E.	1887
Loucks, R. W. E.	1909
Loudon, T. R.	1905
Lowrie, A. W. P.	1911
Ludgate, B. A.	1885
Lumbers, W. C.	1901
Lye, O. G.	1914
Lynar, H. R.	1908

Mac

Macallum, A. F.	1893
MacAndrews, W. M.	1911
Macaulay, R. V.	1911
MacBain, J. T.	1911
MacBeth, C. (deceased)	1896
MacBeth, R. E. A.	1911
Macdonald, A. D.	1910
Macdonald, J. B.	1910
Macdonald, J. A.	1910
Macdonald, G. A.	1910
Macdonald, F. M.	1911
Macdonald, W. A.	1914
Macdougall, A. C.	1901
Macfarlane, E. D.	1909
MacGregor, A. E.	1910
MacKay, A. G.	1907
MacKay, J. T.	1902
MacKay, E. G.	1910
MacKenzie, H. R.	1913
MacKenzie, K. A.	1906
MacKenzie, H. J.	1914
Mackenzie, A. M.	1914
MacKenzie, W. S.	1911
Mackinnon, J. G.	1909
Mackinnon, W.	1906
Mackintosh, D.	1898
Maclachlan, K. S.	1913
Maclachlan, W.	1906
MacLachlan, W. A.	1909
MacLaurin, J. G.	1911
Maclean, B. A.	1909
MacLennan, G. G.	1910
MacLeod, G.	1907
MacLeod, D. D.	1910
MacMillan, G.	1901
MacMurchy, J. A.	1896
MacMurchy, H. G.	1910
Macpherson, N. W.	1909
MacPherson, A. R.	1913
Macpherson, H. N.	1914
MacTavish, H. J.	1910
MacTavish, W. H.	1913

Mc

McAllister, J. E.	1891
McAllister, A. L.	1893
McAlpine, D. D.	1909
McAndrews, J. B.	1911
McAree, J. (deceased)	1882
McArthur, R. E.	1900
McArthur, A. S.	1909
McAuslan, H. J.	1903
McBride, A. H.	1902
McBride, T. C.	1910
McCarthy, T. V.	1913
McCollum, C. R.	1909
McConnell, A. W.	1906
McConnell, R. S.	1913
McCordick, A. S.	1909
McCuaig, O. B.	1904
McCuaig, P. J.	1909
McCulloch, A. L.	1887
McCurdy, J. A. D.	1907
McDonald, R. C.	1914
McDougall, J. (deceased)	1884
McDougall, S. G.	1910
McDowall, R.	1888
McEachren, J. A.	1911
McElhanney, T. A.	1910
McElroy, R. W.	1911
McEntee, B.	1892
McEwen, G. G.	1904
McEwen, H. J.	1911
McFarlen, G. W.	1888
McFarlen, T. J.	1893
McFarlane, J. A.	1903
McFarlane, W. G.	1904
McFarlane, J. B.	1907
McFaul, W. L.	1913
McGarry, P. J.	1910
McGeorge, W. G.	1908
McGhie, W. G.	1911
McGibbon, C. P.	1904
McGorman, S. E.	1906
McGowan, J.	1895
McGregor, W. W. (deceased)	1905
McGregor, J. M.	1908
McGugan, D. J.	1907
McIlwraith, D. G.	1906
McIntosh, A. H.	1907
McIntosh, W. G.	1909
McKay, O.	1885
McKay, C. (deceased)	1904
McKay, W. N.	1895
McKechnie, F. H.	1909
McKenzie, D. A.	1911
McKenzie, D. W.	1905
McKenzie, J. A.	1906
McKim, L. R.	1910
McKinnon, H. L.	1895
McKnight, J. H.	1909
McLaren, A. J.	1911
McLaren, D. L.	1914
McLean, C. A.	1905
McLean, W. N.	1905
McLean, L. A. (deceased)	1908
McLeish, A. G.	1911
McLellan, R. A.	1911
McLennan, A. L.	1902
McLeod, G.	1909
McMaster, A. T. C.	1901
McMaster, W. A. A.	1908
McMillan, J. G.	1900
McMillan, D.	1904
McMillan, V.	1909
McMordie, H. C.	1908
McNab, J. V.	1906
McNaughton, A. L.	1903
McNaughton, F. W.	1898
McNeill, F. W.	1907
McNiven, J.	1910
McPherson, A. J.	1893
McPherson, J. A.	1906
McPherson, W. B.	1911
McQuarrie, M. K.	1907
McQueen, A. A.	1911
McRoberts, A. A.	1908
McSloy, J. I.	1910
McTaggart, A. L.	1894
McVean, H. G.	1901

M

Mace, F. G.	1905
Madden, J. F. S.	1902
Madge, N. G.	1908
Madill, H. H.	1911
Main, W. T.	1893
Maisonville, A. W. R.	1910
Malcolmson, W. S.	1907
Malone, J. E.	1908
Manning, N. H.	1909
Manson, G. J.	1904
Manson, A. B.	1909
Marani, C. J.	1888
Marani, V. G.	1893
Marlatt, K. D.	1908
Marr, N.	1910
Marriott, F. G.	1903
Marrs, C. H.	1902
Marrs, D. W.	1906
Marshall, J. A.	1914
Marshall, J. A. P.	1914
Marshall, R. J.	1908
Marshall, S. A.	1907

Martin, F.	1887
Martin, J. C.	1911
Martin, W. H.	1910
Martin, T.	1896
Martindale, E. S.	1909
Martyn, O. W.	1909
Mason, D. H. C.	1907
Matheson, W. C.	1901
Mathison, P.	1901
Matthews, R. G.	1914
Matthews, A. C.	1910
Maus, C. A.	1903
Maxwell, H. W.	1914
Maxwell, W. A.	1906
Maynard, H. V.	1907
Meader, C. H.	1910
Meadows, C. A.	1911
Meadows, W. W.	1895
Mechin, F. C.	1914
Melson, J. W.	1907
Menzies, J. M.	1906
Mennie, R. S.	1902
Merrill, E. B.	1891
Merriman, H. O.	1910
Middleton, H. T.	1901
Mickle, G. R.	1888
Mickleborough, K. F.	1913
Mickler, G. J.	1913
Mill, F. X. (deceased)	1889
Millar, W. G.	1914
Miller, D. J.	1910
Miller, A. S.	1914
Miller, L. Haun	1900
Miller, M. L.	1903
Miller, L. R.	1906
Milligan, G. L.	1908
Milligan, F. S.	1910
Milligan, W. E.	1914
Millman, N. C.	1913
Mills, G. G.	1907
Mills, P. E.	1910
Mills, L. G.	1911
Minns, J. B.	1907
Minty, W.	1894
Milne, C. G. (deceased)	1892
Mines, W.	1893
Mitchell, J. S.	1914
Mitchell, P. H.	1903
Mitchell, L. C.	1911
Mitchell, C. H.	1892
Mitchell, B. F.	1906
Mitchell, A. B.	1908
Moberley, H. K.	1889
Moffatt, R. W.	1905
Molesworth, G. N.	1907
Molesworth, J. C. P. (deceased)	1908
Monds, W.	1899
Monk, E. D.	1908
Montague, J. R.	1914
Montague, F. F.	1906
Moody, F. H.	1908
Montgomery, R. H.	1903
Moore, H. H.	1902
Moore, E. E.	1904
Moore, J. H.	1888
Moore, J. E. A.	1891
Moore, F. A.	1903
Moore, W. J.	1906
Moore, J. M.	1907
Moorhouse, W. N.	1904
Morden, L. W.	1905
Morgan, J. P.	1910
Morice, J. H.	1908
Morley, P. F.	1907
Morphy, J. A.	1911
Morris, J. L.	1881
Morris, C. A.	1909
Morrison, D.	1914
Morton, G.	1909
Mowbray, F. E. H.	1908
Mullins, E. E.	1903
Mullins, G. J.	1914
Mulqueen, F. J	1913
Munro, A. H.	1910
Munro, W. H.	1904
Munro, G. R.	1905
Munro, F. V.	1909
Muntz, E. P.	1914
Murdie, W. C.	1913
Murdock, C. R.	1906
Murphy, C. J.	1906
Murphy, M. H.	1911
Murray, E. W.	1907
Murray, J. D.	1907
Murray, W. P.	1908
Mutch, D. A. S.	1913

N

Nash, J. C.	1901
Nash, T. S.	1902
Near, W. P.	1906
Neelands, E. V.	1900
Neelands, E. W.	1907
Neelands, R. E. K.	1907
Neelands, R.	1906
Neilly, B.	1907
Neville, E. A.	1909
Nevitt, I. H.	1903
Newhall, V. A.	1910
Newman, W.	1891

Newton, J	1909
Newton, K. L	1913
Newton, W. E	1910
Nichol, F. T	1910
Nicholson, C. J	1894
Nicholson, C. L	1914
Nicholson, J. B	1914
Nicklin, W. G	1905
Niebel, E. H	1911
Nixon, C. K	1911
Noble, E. S	1911
Noecker, C	1914
Northey, R. K	1911
Nourse, A. E	1907

O

O'Brien, E. D	1905
Odell, L. S	1909
O Donnell, V. J	1909
O'Flynn, W. A	1911
O'Grady, W. deC	1908
O'Hearn, J. J	1909
Oke, W. V	1911
Oliver, E. W	1903
Oliver, J. P	1903
O'Neil, C. M	1910
Orr, J. A	1911
O'Sullivan, J. J	1907
Otto, C. J	1913
Owens, J. A	1914

P

Pace, J. D	1903
Pace, G	1904
Pae, A. W	1909
Palmer, C. E	1910
Pardoe, W. S	1904
Paris, J	1904
Park, D. G	1906
Parke, J	1904
Parker, G. C	1910
Parker, J. S	1911
Parkin, J. H	1911
Parkinson, N. F	1913
Parsons, J L. R	1901
Paterson, G. W	1906
Paton, T. K	1907
Patten, B. B	1903, 1905
Patterson, J	1899
Patterson, R. G	1914
Patton, J. McD	1911
Paulin, F. W	1907
Peaker, W. J	1904
Pearce, K. K	1910
Pearson, C. L	1911
Peart, J. D	1914
Peart, J. W	1913
Peckover, H. J	1908
Pedder, J. R. (deceased)	1890
Pennington, C. W	1914
Pepler, S. J	1911
Pequegnat, M	1908
Perrin, W. J	1911
Perron, E	1913
Perry, C. V	1914
Petry, A. M	1909
Pettingill, R. E	1906
Philp, D. H	1903
Phillips, E. H	1900
Phillips, H. G	1908
Phillips, C. H	1910
Phillips, E. P. A	1905
Phillips, W. E	1914
Philp, G. O	1914
Pick, B. W	1911
Pickering, A. E	1904
Pigott, R. B	1909
Pinhey, C. H	1887
Pinkney, D. H	1903
Pivnick, M	1908
Playfair, N. L	1892
Plunkett, T. H	1903
Ponton, G. M	1909
Pope, A. S. H	1899
Porte, E. H	1911
Porte, W. B	1906
Porter, C. J	1909
Potter, R. B	1907
Powell, G. G	1902
Power, G. H	1901
Prentice, J. M. (deceased)	1892
Price, H. W	1901
Pratt, F. M	1911
Prochnow, F. E	1907
Proctor, A. I	1909
Proctor, E. M	1908
Procunier, J. F	1907
Proudfoot, H. W. (deceased)	1897
Publow, C. F	1908
Pullan, H	1911
Pullen, E. F	1905
Purser, R. C	1906
Pye, D. E	1910

Q

Quail, H. C.	1913
Quail, J	1909
Quance, G. E	1907
Quinlan, L. J	1911

R

Railton, L. W.	1911
Raine, H	1907
Ramsay, W. S.	1910
Ramsey, G. L.	1905
Ramsperger, A. F	1909
Raney, P. H.	1914
Rannie, J. L	1907
Ransom, J. T	1908
Ratz, E. G.	1913
Ratz, J. E	1911
Ratz, W. F. (deceased)	1902
Raymer, A. R.	1884
Rayner, G. W.	1905
Raymond, D. C	1904
Read, F. N	1911
Redfern, B. J	1910
Redfern, W. B	1908
Redfern, C. R.	1909
Reid, E. V.	1911
Reid, F. B.	1904
Revell, G. E	1899
Rice, R. H.	1914
Richards, E.	1899
Richardson, C. E.	1910
Richardson, F. L	1908
Richardson, G. H	1888
Richardson, C. W. B.	1907
Richardson, W. A	1911
Ricker, H. A	1908
Riddell, J. M.	1913
Riddell, M. R.	1904
Ridler, A. A	1907
Ritchie, H. C	1910
Ritchie, J. E.	1913
Ro[illegible]. R.	1900
Robertson, A. S.	1914
Robertson, C. S.	1913
Robertson, F. A	1908
Robertson, H. D	1902
Robertson, J	1884
Robertson, J. M.	1914
Robertson, J. M	1893
Robertson, N. R.	1906
Robertson, A. R.	1908
Robertson, D. F	1903
Robinson, J. (deceased)	1891
Robinson, F. J	1895
Robinson, A. H. A.	1897
Robinson, L. H.	1904
Robinson, W. A	1908
Robinson, R. C.	1908
Robinson, W. E	1911
Roblin, H. L	1911
Roddick, J. O	1906
Rogers, J.	1887
Rogers, C. H	1906
Rogers, L. J	1908
Rolph, H	1894
Rolfson, O	1906
Rose, K.	1888
Rose, R. R	1908
Rosebrugh, T. R	1888
Ross, J. A	1892
Ross, J. E	1888
Ross, D	1908
Ross, R. A	1890
Ross, K. G	1906
Ross, R. B. (deceased)	1905
Ross, R. C	1906
Ross, O. W	1910
Rothery, L. W	1911
Rothwell, T. E	1905
Rothwell, H. E	1907
Rothwell, H. D	1914
Rous, C. C.	1913
Rowe, T. L. F	1911
Roxburgh, G. S	1904
Rounthwaite, C. H. E.	1900
Routly, H. T	1906
Rubidge, W. F. B	1910
Runciman, A. S	1911
Russell, C. H.	1913
Russell, W. B	1891
Russel, R.	1893
Rust, H. P	1901
Rutherford, F. N	1904
Rutherford, F. S.	1914
Rutledge, L. T	1909
Rutley, F. G	1911
Ryckman, J. H	1906

S

Salter, E. M	1911
Sanders, W. K	1906
Sanderson, A. U	1909
Sara, R. A.	1909
Sauer, M. V	1901
Saunders, G. A.	1899

Saunders, H. W	1900
Scandrett, F. R	1911
Scarlett, A. A	1913
Scheibe, R. R	1896
Scheibe, H. M	1903
Schlarbaum, A	1909
Schofield, C. A	1907
Schwenger, C. E	1909
Scott, C. A	1909
Scott, G. S	1905
Scott, W. A	1906
Scott, W. F	1897
Scott, J. W	1911
Seaton, N. D	1911
Secord, A. O	1908
Sedgwick, A	1909
Segre, B. H	1909
Seibert, F. V	1909
Serson, H. V	1905
Servos, F. M	1914
Sewell, L	1913
Seymour, H. L	1903
Shanks, T	1899
Sharp, M. C	1913
Sharpe, N	1911
Shaw, J. H	1898
Shaw, K. E	1913
Shaw, W. E. V	1908
Shaw, M. R	1909
Shaw, W. C	1910
Sheard, P	1911
Shearer, H. F	1908
Sheply, J. D	1904
Sheppard, A. C. T	1907
Sheppard, H. L	1914
Sheppard, N. E. D	1914
Shields, J. D	1894
Shipley, A. E	1898
Shirriff, C. H	1905
Shupe, S	1914
Sibbett, W. A	1911
Sills, C. P	1911
Silvester, G. E	1891
Sime, A. W	1914
Simpson, B. N	1914
Sims, F. R	1913
Sinclair, D. (deceased)	1902
Sinclair, D. G	1913
Sinclair, C. E	1914
Sisson, C. E	1905
Skaith, J. B	1914
Skinner, W. C	1914
Slater, F. W	1904
Smallpiece, F. C	1898
Smart, R. S	1904
Smiley, R. W	1897
Smith, A. N	1892
Smith, A	1894
Smith, H. G. (deceased)	1903
Smith, H. M	1914
Smith, R. W	1898
Smith, J. H	1903
Smith, D. A	1904
Smith, K. H	1911
Smith, M. L	1911
Smith, W. C	1910
Smith, G. E	1910
Smith, F. L	1910
Smith, F. R	1907
Smither, W. J	1904
Smithrim, E. R	1907
Snaith, W	1907
Sneath, R. G	1911
Somers, N. L	1914
Soper, R. W	1913
Sparling, M. W	1909
Speller, F. N	1893
Spellman, W. A	1913
Spence, J. J	1909
Spencer, A. C	1907
Spotton, A. K	1894
Spry, R. J	1910
Squire, G. E	1911
Squire, R. H. (deceased)	1893
Stamford, W. L	1908
Starr, R. H	1908
Stayner, D. S	1909
Steele, I. J	1902
Steele, A. L	1910
Steele, W. S	1911
Stern, E. W	1884
Steven, H. M	1910
Stevenson, W. H	1901
Stewart, A. E	1911
Stewart, J. A	1898
Stewart, D. L. N	1905
Stewart, M. A	1905
Stewart, R. O	1911
Stewart, W. M	1906
Stewart, G. S	1907
Stewart, A. W. J	1908
Stewart, N. C	1909
Stiles, J. A	1907
Stiver, J. L	1907
St. Lawrence, J	1908
Stock, J. J	1908
Stock, P. H	1909
Stocking, F. T	1895
Stone, L. I	1910
Stoneman, E. C. R	1914
Story, R. A	1911
Strathy, J. M	1913
Street, J. C	1909
Strome, I. R	1914

Stroud, S.	1909
Stuart, H. B.	1908
Stuart, J. L. G.	1907–1908
Stubbs, W. F.	1905
Stull, W. W.	1897
Sturdy, N. H.	1905
Summers, G. F.	1907
Sutcliffe, H. W.	1907
Sutherland, A. L.	1910
Sutherland, W. H.	1902
Sutherland, C. C.	1909
Swan, W. G.	1905
Swan, R. G.	1909
Sword, A. D.	1908–1909
Sykes, F. H.	1905
Symmes, H. D.	1891
Szammers, C. F.	1911

T

Tate, H. W.	1909
Taylor, R.	1911
Taylor, T.	1902
Taylor, W. V.	1893
Taylor, A.	1900
Taylor, J. S.	1914
Taylor, J. W. R.	1908
Taylor, W. E.	1908
Teasdale, C. M.	1902
Temes, C. N.	1914
Temple, J. B.	1911
Tennant, D. C.	1899
Tennent, E. H.	1914
Tennant, W. C. (deceased)	1900
Ternan, E. A.	1910
Thom, W. H.	1910
Thomas, G. C.	1911
Thomas, V. C.	1908
Thompson, J. M.	1913
Thompson, P. M.	1907
Thompson, E. A.	1909
Thompson, H. B.	1910
Thompson, R. M. A.	1910
Thompson, W. K.	1913
Thomson, D. J.	1913
Thomson, T. K.	1886
Thomson, R. W.	1892
Thomson, S. E.	1904
Thomson, L. R.	1905–1907
Thomson, J. E.	1906
Thomson, O. R.	1907
Thorne, S. M.	1900
Thornley, J. H.	1908
Thorold, F. W.	1900
Tillson, E. D.	1905
Tilston, J. A.	1914
Tipper, G. A.	1909
Titus, C. G.	1910
Toms, C. G.	1908
Torrance, R. D.	1911
Torrance, T. E.	1913
Tough, W. G.	1911
Townsend, C. J.	1904
Townsend, D. T.	1904
Traill, J. J.	1905
Treadgold, W. M.	1905
Trees, S. L.	1903
Trees, A. G.	1909
Treloar, G. E.	1914
Tremaine, R. C. C. (deceased)	1895
Trimble, A. V.	1904
Trow, R. M.	1913
Tucker, B. B.	1904
Turnbull, W. G.	1909
Turner, W. E.	1905
Twidale, E. A.	1914
Tye, H. W.	1908
Tyrrell, J. W.	1883
Tyrrell, H. G.	1886

U

Umbach, J. E.	1903
Underwood, J. E.	1909
Ure, W. G.	1913
Uren, A. E.	1905

V

Van Allen, K. M.	1910
VanDyke, F. T.	1914
VanEvery, W. W.	1899
VanNorman, C. P.	1908–1909
VanNostrand, J.	1909
Vatcher, A.	1909
Vaughan, J. M.	1905
Venney, L. T.	1910
Vercoe, H. L.	1898
Verity, M. F.	1914
Vickers, N.	1911
Vickery, C. L.	1906
Villeneuve, T. L.	1908
Von Gunten, C. F.	1913

W

Waddell, H. O.	1914
Wade, E.	1904
Wagner, H. W.	1914
Wagner, N.	1910
Wagner, W. E.	1899
Wagner, H. L.	1905
Waite, J. H. C.	1911
Walcott, W. D.	1911
Waldron, J.	1903
Walker, E. W. (deceased)	1904
Walker, R. M.	1910
Walker, W. J.	1907
Walker, J. A.	1908
Walker, C. M.	1909
Wallace, G. L.	1911
Wallace, H. D. M.	1914
Walton, T. (deceased)	1910
Wanless, A. A.	1902
Wardell, A.	1911
Warrington, G. A.	1910
Wass, S. B.	1903
Watson, F. E.	1911
Watson, M. B.	1910
Watson, R. B.	1893
Watson, J. P.	1904
Watt, G. H.	1899
Watts, R. E.	1913
Waugh, B.	1908
Webb, C. E.	1909
Webb, E. E.	1909
Webster, C. A.	1913
Webster, H.	1913
Wedlake, R. M.	1908
Weeks, M. B.	1897
Weir, D. H.	1913
Weir, H. M.	1900
Weir, J. M.	1904
Weir, R. P.	1908
Weldon, E. A.	1897
Welford, P. G.	1911
Wells, A. F.	1904
West, A. M.	1908
Wheler, A. G.	1911
Whelihan, J. A.	1903
White, A. V.	1892
White, H. F.	1903
White, W. R.	1908
White, W. J.	1908
White, F. C.	1909
White, H. M.	1910
Whitelaw, A. R.	1909
Whitley, P. L.	1914
Whitside, J. L.	1910
Wickens, W. S.	1910
Wickett, T.	1889
Wickett, W. E. (deceased)	1906
Wiggins, T. H.	1890
Wigle, A. E.	1914
Wigle, J. A. H.	1914
Wilkes, E. D.	1907
Wilkes, G. H.	1911
Wilkinson, T. A.	1898
Wilkinson, R. G.	1909
Williams, C. G.	1903
Williams, E. R.	1911
Williams, J. A. McK.	1909
Williams, G. K.	1910
Williamson, O. T. G.	1909
Williamson, D. A.	1898
Wilson, A. C.	1914
Wilson, H. A.	1911
Wilson, H. P.	1914
Wilson, R. D.	1901
Wilson, N. D.	1903
Wilson, J. N.	1906
Wilson, A. F.	1907
Wilson, F. D.	1908
Wilson, J. M.	1908
Wilson, L. R.	1909
Wilson, F. F.	1909
Wilson, W. H.	1910
Winters, W. S.	1913
Wing, D. O.	1908
Withrow, W. J.	1890
Withrow, F. D.	1900
Wood, E. M.	1906
Wood, R. F. B.	1913
Woodley, G. E.	1910
Woods, M. H.	1907
Wookey, S. A.	1909
Worden, W. G.	1911
Workman, G. R.	1910
Worthington, W. R.	1904
Wright, A. J.	1913
Wright, C. H. C.	1888
Wright, R. T.	1894
Wright, W. F.	1904
Wright, L. A.	1910
Wright, G. W. A.	1907
Wright, W. J. T.	1911
Wrong, F. H.	1911
Wylie, W. H.	1911
Wyman, H. K.	1911

Y

Yeates, E.	1899
Yorke, L. P.	1911
Youell, A. W.	1910
Young, C. R.	1903
Young, W. S.	1910
Young, W. H.	1905
Young, R.	1908
Young, J.	1907
Young, A.	1911
Young, S.	1911
Young, R. B.	1913
Young, R. W.	1914

Z

Zahn, H. J.	1902
Zimmer, A. R.	1907
Zinkan, W. E.	1911